AN IDENTIFICATION OF THE MARKET NEEDS AND WANTS OF UNDERGRADUATE STUDENTS WITH SPECIFIC EMPHASIS ON THE CELL PHONE INDUSTRY

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ABSTRACT

This study is focused on the cellular communication needs and wants of undergraduate university and technikon students. The study derived its information from a survey of 224 students who, via a questionnaire, were able to detail their present and future cellular communication needs.

Among other findings, the results of this survey, revealed the following:

- The undergraduate university and technikon student market is not homogenous

- Ninety-three percent of university and technikon students in the sample had access to a cellular telephone

- Short Message Services(SMSs) and "Please Call Me" services were frequently favoured and used

- The market segment is highly brand conscious, preferring specific branded cellular telephones

- Despite having a limited access to disposable income (most of which is provided by their parents), respondents spent between R75 and R1 000 per month on their cellular needs.

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CHAPTER ONE

INTRODUCTION

1.1   INTRODUCTION

Twenty years ago South African consumers had never heard or come into

contact with cellular communication. Then the concept became real nine years

ago, with the granting of licenses to the Vodacom Group (PTY) LTD and MTN to

operate as network providers in the country. While, soothsayers predicted that

cellular communication would never work in a country where millions of people

lived below the breadline, there were those who believed that cellular

communication would become the main communication option for most South

Africans.   Today it is estimated that over a quarter of South Africa's population

has access to a cellular telephone (Daily News: 30 April 2003).

1.2   MOTIVATION FOR THE RESEARCH

This study focuses on the product choices made by undergraduate university and

technikon students. These product choices refer specifically to cellular networks

and cellular telephones.

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Further, consumer behaviour theory is explored as a ways and means of understanding these choices with the aim of assisting marketers to better understand the needs and wants of this market segment. This could then extend itself to various aspects of new product development to satisfy the market.

However, as the study will show, this segment of the market is not homogenous. There are a variety of consumer behavior outcomes that affect this segment. Therefore in order to fulfill the needs and wants of this consumer group, marketers would have to make an effort to understand the different facets that make up this segment.

1.3   VALUE OF THE PROJECT

The purpose of this research is to determine the various consumer behaviour patterns of undergraduate university and technikon students with regard to their cellular purchase decisions.

1.4　**OBJECTIVES OF THE STUDY**

This study was undertaken with the following objectives in mind:

- To determine the student consumer profile in terms of their cellular services consumed

- To identify possible barriers to the consumption of cellular services

- To determine ways to overcome these barriers and thus increase the consumer base

- To evaluate advertising efforts made by the various network providers and comment on their effectiveness in terms of the emerging student market

- To identify ways of targeting the student as a consumer

1.5　**RESEARCH METHODOLOGY**

This exploratory study was based on the circulation of 250 questionnaires to undergraduate university and tecknikon students. The questionnaire delved into their cellular purchase decisions. The results of the survey were analysed and various findings and marketing recommendations were made.

1.6   LIMITATIONS OF THE PROJECT

Limitations of this project include the following:

♦ Sample: the sample may be considered small with 250 questionnaires sent out to respondents.

♦ Results and findings may not be truly representative of all undergraduate university and tecknikon students as the research was concentrated in the Durban area.

1.7   STRUCTURE OF THE STUDY

Chapter Two of this study provides a brief overview of consumer behaviour theory. The chapter begins with an investigation into the various definitions of consumer behaviour. In addition the relevance of consumer behaviour theory is discussed with reference to: the marketing manager, ethicists and advocacy groups, policy makers and regulators and finally, the consumer.

The bulk of this chapter converges on the four components of consumer behavior, namely: (1) the psychological core, (2) the decision-making process, (3) the consumer's culture and, (4) consumer behaviour outcomes.

Chapter Three focuses on cellular telephony globally and in South Africa. It begins by looking at a brief history of the cellular telephone industry. This is followed by an explanation of the Global System for Mobile Telecommunication (GSM). The progress of cellular telephony in Africa is then charted and this is followed by a discussion of the cellular telecommunication infrastructure currently in place in South Africa. A summary of the three key network operators namely, Vodacom, MTN and Cell C are then studied. This is followed by a brief look at some of the pertinent issues within the South African market, including demographics, education, occupation and employment.

Chapter Four concentrates on the research methodology of this study focusing on: the research context, the problem and its setting, objectives of the study, hypothesis statements, research design, sources and collection of data and the analysis and presentation of data.

Chapter Five presents an analysis of the findings, discussed under the following headings: general information, employment history, cellular preferences, network provider performance, current cellular telephone package analysis, brand awareness, the Internet and future cellular service expectations. The chapter ends with a revisitation of the hypothesis statements.

The final chapter provides recommendations from a marketing perspective and the conclusions of this study are discussed.

CHAPTER TWO

CONSUMER BEHAVIOUR THEORY : RELEVANT CONCEPTS

2.1 INTRODUCTION

This chapter focuses on relevant consumer behaviour theory and begins with various definitions on the subject. Thereafter, the significance of a thorough understanding of consumer behaviour theory is investigated with reference to various individuals and groups.

The bulk of this chapter, however, is focused on the various components of consumer behaviour and hones in on the four main domains: (1) the psychological core, (2) the process of making decisions, (3) the consumer's culture and, (4) consumer behaviour outcomes.

2.2 CONSUMER BEHAVIOUR DEFINED

There seem to be no limits to the number of consumer behaviour definitions. In fact, there seem to be just as many definitions, as there are books on the subject.

For example, Mowen and Minor in <u>Consumer Behaviour : A Framework</u> (2001: 3), assert that consumer behavior is defined as "...a study of the buying units and the exchange processes involved in the acquiring, consuming and disposing of goods, services, experience, and ideas." Their definition places equal emphasis on both the exchange process and the buying units involved.

Hoyer and MacInnis in <u>Consumer Behaviour</u> (2000: 4), contend that consumer behaviour"...reflects the totality of consumer's decisions with respect to the acquiring, consumption and disposition of goods, services, time, and ideas by (human) decision making units (over time)." It is evident that this definition accentuates the decision-making powers of the consumer.

Statt, D in <u>Understanding the Consumer: A Psychological Approach</u> (1997: 6), asserts that consumer behaviour comprises "...the mental, emotional and physical activities that people engage in when selecting, purchasing, using and disposing products and services so as to satisfy needs and desires." This definition takes on a more holistic approach to the consumer, who is at the centre of the exchange process.

Despite the numerous definitions there are commonalities. These include concepts such as: the consumer, an exchange process, products and services and, the fulfillment of wants and needs.

Particular emphasis is really a moot point and seems to be dependent on which perspective the author is investigating.

2.3   THE RELEVANCE OF CONSUMER BEHAVIOUR

Hanna , N and Wozniak, R in Consumer Behaviour: An Applied Approach (2001: 67) argue that a thorough understanding of consumer behaviour yields a number of benefits including:

- assisting the marketing team in various decision making processes

- providing advocacy groups and ethicists with a strong foundation from which to protect consumers

- helping regulators and legislators create the law, and providing researches with a knowledge base from which to regulate the conditions for the buying and selling of products

- empowering consumers themselves and allowing them to protect their own interests

2.3.1   RELEVANCE TO THE MARKETING MANAGER

Kotler, P in Marketing Management: The Millennium Edition (2000: 8) defines marketing as "… a societal process by which individuals and groups obtain what they want and need through creating, offering and freely exchanging products and services with each other."

From this definition, it is derived that the study of consumer behaviour provides critical information to marketing managers in terms of the development of marketing strategies which, first and foremost, must serve a consumer need and want.

2.3.2 RELEVANCE TO ETHICISTS AND ADVOCACY GROUPS

Recently advocacy groups have become stringent consumer watchdogs who create public awareness of inappropriate marketing practices. The study of consumer behaviour to such organisations results in a heightened awareness of the needs and wants of consumers. Unethical marketing practice or products and services that harm the consumer may result in consumer resistance or even boycotts.

2.3.3 RELEVANCE TO POLICY MAKERS AND REGULATORS

The protection of the consumer is the responsibility of lawmakers and public policy makers who strive to protect consumers from unfair, unsafe or inappropriate marketing practices. In protecting the right to be informed, consumer researchers advise in policy making and investigate deceptive and misleading adverts.

For example, in South Africa, the South African Bureau of Standards (SABS) is a governmental organisation charged with the responsibility of investigating the claims of marketers with regard to their advertised products and services (www.sabs.co.za).

2.3.4 RELEVANCE TO CONSUMERS

A consumer is better able to protect herself from marketing gimmicks and poor product performance, if she had an understanding of consumer behaviour. This results in a better environment for consumers where the consumer is able to make informed choices based on needs and wants.

2.4 **COMPONENTS OF CONSUMER BEHAVIOUR**

Hoyer and MacInnis (2000: 52), offer that consumer behaviour can be understood via four domains: the psychological core, the process of making decisions, the consumer's culture and consumer behaviour outcomes.

2.4.1 THE PSYCHOLOGYICAL CORE

Hoyer and MacInnis (2000: 15) state that before consumers make decisions, they must have some source of knowledge or information upon which their decision can be based. This source of information is referred to as the psychological core, which can be understood via the following sub-sections:

- Motivation, Ability and Opportunity
  - ➤ Consumer Motivation

    Hoyer and MacInnis (2000: 54) define motivation as "…an inner state of arousal" where the motivated consumer is energised, ready and willing to enter into a particular activity. Further, consumers are motivated when they see a goal as personally relevant - meaning it adds value to their needs, values, and goals.

  - ➤ Consumer Ability

    Hoyer and MacInnis (2000: 71) define ability as "…the extent to which consumers have the resources (knowledge, intelligence and money) necessary to make an outcome happen. In other words, even if motivation is high, the consumer may not be able to reach the goal if their ability is low.

> Consumer Opportunity

The final factor affecting whether motivation results in action is the consumer's opportunity to process it. Major factors that impact on the opportunity to process information are time, distraction, the amount of information, the complexity of the information and the repetition of information.

- Exposure, Attention and Perception
  > Exposure

  Hoyer and MacInnis (2000: 81) define exposure as the process "…by which consumers come into physical contact with the stimulus." Physical contact can be made via marketing sources such as advertisements, salespeople, brand symbols and packages. Non-marketing sources such as word-of-mouth marketing, also results in exposing the consumer.

  One of the factors influencing exposure is the actual positioning of an advertisement within a medium. For example, advertisements are placed at the beginning or the end of an advertisement break have the greatest exposure since consumers are still involved in the program or they are waiting for it to return.

➢ Attention

Marketers must do more than only expose consumers to information, they must also get them to attend to it. According to Hawkins, Best and Coney in <u>Consumer Behaviour</u>, (1986: 107), attention occurs when the consumer processes the stimulus. Thus when a consumer attends to an advertisement, she is allocating cognitive capacity to the task. The more demanding the task, or the more involved the person is in the task, the greater the amount of attention focused on it. Attention can be selective, divided or limited.

➢ Perception

Hoyer and MacInnis (2000: 92) define perception as the process "…by which incoming stimuli activates our sensory receptors (ears, eyes, taste buds, skin, etc.)." After we have been exposed to a stimulus and have devoted some attention to it, we are in a position to perceive it. The process of visual stimuli is influenced by colour. Intensity and music are important aspects of aural stimuli. Taste perceptions are critical for some products, however marketers should be aware that taste perceptions vary across culture. Finally, the use of smell and touch can be an effective marketing strategy for some products.

- Knowledge and Understanding

Consumers understand something in their own environment based on their prior knowledge, which is represented by a set of associations about an object, or an activity. Understanding the content of consumers' knowledge is important because marketers are often in the position of creating new knowledge by brand development or brand personalities.

- Attitudes

Hoyer and MacInnis (2000: 131) state that attitude is an "…overall evaluation that expresses how much we like or dislike an object, issue, person or action." Attitudes are learned and they tend to persist over time and are thus important because they serve several functions: they guide our thoughts, influence our feelings and affect our behaviour.

Attitudes are based on high effort central route procession, where consumers are either more likely to devote a lot more effort to experience considerable personal involvement. Low effort peripheral route processing is where consumers' attitudes are based on a more superficial analysis of the message.

- Memory and Retrieval

  ➢ Memory

    The consumer's memory is a vast personal warehouse of knowledge about products, services, shopping excursions and consumption experiences. Memory reflects ones prior knowledge. There are three types of memories: sensory memory, short term memory and long term memory.

  ➢ Retrieval

    Hoyer and MacInnis (2000: 175) define retrieval as "...the process of remembering information that is stored in memory."

    Entries are retrieved when concepts are activated in memory and information is made accessible.

2.4.2 THE DECISION-MAKING PROCESS

The consumer's decision-making process follows sequential steps which begins with the recognition of the problem and an information search. Consumers must first realise that they have a problem before they can begin the process of making a decision about it. Once this is completed, they must then collect information to help them make the decision.

Because the decision-making process is affected by the amount of effort consumers expend in making those decisions, this section will also examine the decision-making process when consumer's effort is high and when efforts are low. Finally, consumer satisfaction and dissatisfaction with the decision will be examined.

- Problem Recognition and Information Search

Hoyer and MacInnis (2000: 199) define problem recognition as "...the perceived difference between an actual and an ideal state." When a discrepancy between these two states exists, the consumer may be motivated to resolve it by engaging in decision making.

Information search consists of two types: internal and external. Internal search is the recall of information, experiences and feelings from memory. In general the extent of the internal search will increase as motivation, ability and opportunity increase.

On the other hand, external search involves consumers acquiring information from outside sources. These methods include pre-purchase searches, retailer and media searches and the use of the Internet. Here again the extent of the search will vary widely depending on motivation, ability and opportunity.

- Decision-Making Based on High Effort

After the problem recognition and information search process is completed, consumers can engage in some form of judgment or decision making, which can vary in terms of processing effort from high to low.

Judgments and decision-making are often confused with one another, but Hoyer and MacInnis (2000: 223) define judgments as "… estimating or evaluating the likelihood of an event", whilst decision making is defined as "…making a selection between options or courses of action."

Two types of judgments are: estimations of the likelihood and judgments of goodness or badness, both of which can be made by recalling past judgments from memory. Decisions can also be made based on emotions or feelings, using a type of a holistic processing in which emotions or images play a key role.

- Decision-Making Based on Low Effort

When consumers have low motivation, ability and opportunity to process information, their judgment and decision processes involve less effort than when motivation, ability and opportunity is high.

A key aspect of low effort processing is that consumers tend to use heuristics, or ways of simplifying the judgment or decision. In other words, consumers may base their judgments on comparisons to a prototype or on accessibility of information.

- Post-Decision Processes

After the decision related to the acquisition, consumption, or disposition of any product or service has been made, the consumer may feel uncertain about his/her choice. Hoyer and MacInnis (2000: 273), define this as post-decision dissonance, which is "...a feeling of anxiety over whether or not the correct decision was made." Post-decision dissonance may occur when there are more that one attractive alternatives or when the decision is an important one.

2.4.3 THE CONSUMER'S CULTURE

The consumer's culture is the fourth consumer behaviour domain. Hoyer and MacInnis define four main categories of the consumer's culture that impact consumer behaviour:

- Regional, ethic, and religious influences (2001: 52)
- Social class influences (2001: 330)
- Age, gender and household influences (2001: 357)
- Psychographics, values, personality and lifestyle (2001: 415)

➤ Regional Influences

Hoyer and MacInnis in <u>Consumer Behaviour</u> (2000: 303) state that regional influences occur because people tend to work and live in the same area where residents in one part of the country can develop patterns of behaviour that differ from those in another area.

➤ Religious Influences

Hoyer and MacInnis also contend that "religion provides individuals with a structured set of beliefs and values that serve as a code of conduct or guide to behaviour," (200:327). Religion, therefore, is an important influence on consumer behaviour simply because an entire grouping of people may react to a particular product based on their religious beliefs.

➤ Ethnic Influences

Harris, PR and Moran, RT in <u>Managing Cultural Differences</u>, (1985: 117), define ethnicity as "…a group bound by ties of cultural homogeneity." Such groups are linked by similar values, customs, dress, religion and language. Ethnicity is frequently closely related to nationality or region of origin.

➢ Social Class Influences on Consumer Behaviour

Hoyer and MacInnis (200:331) purport that "most societies have a social class hierarchy that confers higher status to some classes of people than to others." These social classes consist of identifiable groups of individuals whose behaviour and lifestyle differ from those of members of other classes.

Further to this, social class is determined by many factors including occupation, education, family position and social contacts, to name but a few.

➢ The Influence of Age

Often marketers segment consumers by age because is it assumed that individuals from the same age group share similar experiences, needs and desires. Du Plessis and Rousseau in <u>Buyer Behaviour: A Multicultural Approach</u>, (1999: 97) argue that the South African market can be divided into four major age groups:

❖ Teens

❖ Generation X

❖ Baby boomers, and

❖ The 50 and older market

➢ The Influence of Gender

Gender differences also effect consumer behaviour. Globally, gender roles are changing and this change can be attributed to the fact that more and more women are becoming financially independent. As a result, males are re-examining their roles within the household.

➢ Household Influences on Consumer Behaviour

Households too are changing on a global level. Today, single-parent families are more common than the tradition family with both mother and father. The increase in nontraditional household has increased due to factors such as:

❖ Late marriages

❖ Cohabitation

❖ Dual-career families

❖ Increased divorce, and

❖ Smaller families

Household members can play different roles in the decision process: spouses vary in their influence on the decision process and children can influence the process by making requests of parents.

> Social Influences

Hoyer and MacInnis define social influences as "...information by and pressures from individuals, groups, and the mass media that effect how a person behaves" (2000: 387). The authors go on to state that sources of influence can be described as marketer dominated or non-marketer dominated.

Marketer dominated sources of influence are delivered from a marketing agent (advertising, personal selling), while non-marketer dominated sources are influences delivered from an entity outside a marketing organisation (friends, family and the media).

However, two influences (which fall under the category of non-marketer dominated sources) have a direct bearing on this topic - that of opinion leaders and market mavens. Opinion leaders are those who act as information brokers between the mass media and the opinions and behaviours of individuals or groups. Market mavens are individuals who have information about many products, places to shop and other facets of the marketplace, and initiate discussions with consumers and respond to requests from consumers for market information (Hoyer and MacInnis: 395).

An important facet of social influences is that of reference groups which is defined as a set of people with whom individuals compare themselves to guide their attitudes, knowledge, and behaviour. Consumers want to either belong to a reference group (associative reference group), be like a particular group (aspirational reference groups), or not want to be associated with a reference group (dissociative reference groups). References groups are important because they have a normative influence over what we consume.

Normative influences are social pressures designed to encourage conformity to the expectations of others. As a result brand-choice congruence dictates the likelihood that consumers will buy what others in their group buy simply because they all want to conform.

➢ Psychographics: Values, Personality and Lifestyles
Psychographics is a description of consumers on the basis of their psychological and behavioural characteristics. Values, personality and lifestyles make up the basic components of psychographics.

Values, or enduring beliefs that a given outcome is good, is what makes us who we are because they are one of the first things we learn as children. However, this is not absolute.

Lifestyle is dynamic and that of the consumer is subject to change, often mingling with that of other cultures.

2.4.4 CONSUMER BEHAVIOUR OUTCOMES

The fifth consumer behaviour domain discusses the symbolic role that products and services can play. Some products are used as conscious or unconscious badges that designate the various social categories of which we are members.

Products and rituals hold symbolic significance when we undergo role transition they serve as symbols by connecting us to people, places, and times that have been important to us, and are symbols of our individuality and uniqueness. The combined symbolic uses of products and rituals affect our self-concept.

Meanings derived from the consumer take the form of emblematic functions, geographic emblems, ethnic emblems, social class emblems, gender emblems and reference group emblems.

- Emblematic functions are the use of products and are used to symbolise membership in social groupings
- Geographic emblems use products to symbolise location
- Ethnic emblems use products and consumptions identifies cultures and subcultures

- Social class emblems use products to symbolise social class
- Gender emblems including food, clothing, jewelry and alcoholic beverages are only some of the products categories associated with the membership to the male and female gender groupings
- Reference group emblems such as varsity jackets, special helmets, colours and jewelry that designate gangs may also symbolize reference group memberships

Products are regarded as special for the following reasons,

- They have symbolic value
- They have mood-altering properties
- They are extremely useful.

2.5 CONCLUSION

From the discussion, it is clear that consumers cannot be regarded as a single, homogenous grouping with similar needs and wants. There are various aspects which impact on the consumer and these aspects need to be fully understood by the marketer for the successful promotion of goods and services.

CHAPTER THREE

CELLULAR TELEPHONY GLOBALLY AND IN SOUTH AFRICA

3.1   INTRODUCTION

This chapter begins with a history of the cellular telephone industry on a global level and then proceeds to investigate the various components of GSM (Global System for Mobile telecommunications).   The progress of mobile telephony in Africa is then examined, followed by the cellular telecommunication infrastructure currently in use in South Africa.

A summary of the three network operators, namely, Vodacom, MTN and Cell C are then studied, followed by a brief look at some of the pertinent issues within the South African market.

3.2 THE HISTORY OF THE CELLULAR TELEPHONY INDUSTRY

The need to increase public safety was key to the genesis of today's rapidly growing wireless communications industry. In the 1920s, police departments in the United States were among the first who sought to use a radio-telephone service that had improved the safety of ocean liners, in their patrol cars (www.intel.com).

But the technology to enable mobile communication services for public safety agencies, was not yet available.   Early radiotelephone systems could be housed on ships with reasonable ease, but were too large and unwieldy for cars. Also, bumpy streets, tall buildings and uneven landscapes prevented successful transmission of the radiotelephone signals on land.

The technological breakthrough came in 1935, when Edwin Howard Armstrong unveiled his invention, Frequency Modulation (FM), to improve radio broadcasting. This technology reduced the required bulk of radio equipment and improved transmission quality.

Then, the United States' involvement in World War II created an urgent need for FM technology to take the place of Amplitude Modulated (AM) technology for higher quality, two-way mobile radio communications on the battlefield.

The strategic value of wireless communication on the battlefield spurred companies like AT&T, Motorola and General Electric to focus on refining mobile and portable communications. Motorola's FM Handie-Talkie and Walkie-Talkie figured prominently among the products developed during the war years and carried over into peacetime use (www.motorola.com).

Although a form of mobile telephone service was available in the late 1940s, its capacity was limited to a few available radio channels to carry calls. For example, cities like New York were limited to twelve simultaneous callers (www.wow-com.com). In 1947, in an effort to use the airwaves more efficiently, AT&T engineers decided to stretch the limited number of radio frequencies available for mobile service by scattering multiple low-power transmitters throughout a metropolitan area, and "handing off" calls from transmitter to transmitter as customers moved around in their vehicles.

This new technique would allow more customers to access the system simultaneously, by re-using the frequencies across the city. When more capacity was needed, the area served by each transmitter could be divided again. This was the birth of *"wireless"* technology. But the service was ahead of its time. It took 20 years to develop sophisticated call "handoff" technology and for the Federal Communication Commission (FCC) to give tentative approval for cellular service to proceed.

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But, by the early 1970s, the technological pieces of the wireless puzzle had fallen into place. In 1973, Motorola introduced its revolutionary new DynaTAC mobile phone, a conveniently sized radiotelephone set. In 1977, the FCC authorised two experimental licenses - to AT&T in Chicago, and to Motorola and American Radio Telephone Service, Inc. in the Baltimore/Washington corridor www.uscellphone.com.

Similarly, during the early 1980s, analog cellular telephone systems were experiencing rapid growth in European countries including Scandinavia, the United Kingdom, France and Germany. However, each country developed its own system, which was resultantly incompatible with each other. This was an obviously undesirable situation, because not only was the mobile equipment limited to operation within national boundaries but there was a very limited market for each type of equipment. Therefore, economies of scale, and the subsequent savings, could not be realised.

This was realised by the Europeans early on and in 1982 the Conference of European Posts and Telegraphs (CEPT) formed a study group called the Groupe Spécial Mobile (GSM) to study and develop a pan-European public land mobile system.

The proposed system had to meet certain criteria:

- good subjective speech quality,

- low terminal and service cost,

- support for international roaming,

- ability to support handheld terminals,

- support for a range of new services and facilities,

- spectral efficiency, and

- ISDN compatibility.

In 1989, GSM responsibility was transferred to the European Telecommunication Standards Institute (ETSI), and Phase I of the GSM specifications were published in 1990. Commercial service was started in mid-1991, and by 1993 there were 36 GSM networks in 22 countries, with 25 additional countries having already selected or considering GSM. This is not only a European standard - South Africa, Australia, and many Middle and Far East countries also chose GSM and by the 1994, there were 1.3 million subscribers worldwide. The acronym GSM now stands for Global System for Mobile telecommunications.

3.3 COMPONENTS OF GSM

3.3.1 THE GSM NETWORK

FIGURE 3.1

THE GSM NETWORK

1	2	3	4

1   Mobile Station (MS)

2   The Radio Sub-system

3   The Switching Sub-system

4   Telkom Telecommunication Switch.
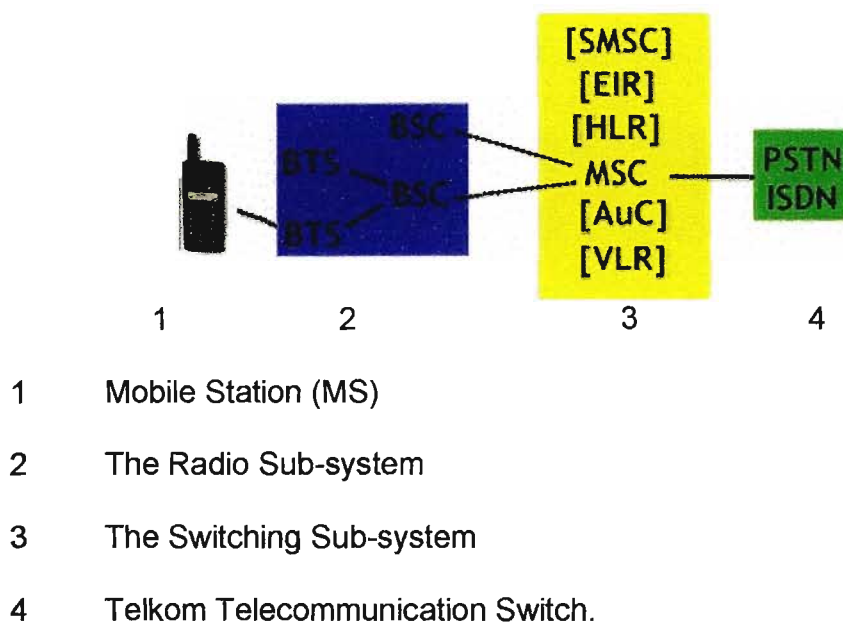
A typical GSM network is shown above in Figure 3.1. Each of the different subsystems is explained in greater below.

3.3.2 MOBILE STATION

The mobile station comes in a number of different forms, ranging from the traditional car-mounted phone operating at 20 Watts (20W), through transportables operating at 8W and 5W, to the increasingly popular handportable units, which typically radiate less than 2W. A fifth class for hand portables operating at 0.8W has been specified for Micro Cellular versions of the network.

One of the main factors governing the handportable size and weight is the battery pack. Several features of the system are designed to allow this either to be smaller or to give a substantially longer life between charges. Chief among these is Discontinuous Receive (DRX). This allows the mobile to synchronize its listening period to a known paging cycle of the network. This can typically reduce the standby power requirements by 90%.

3.3.3 THE RADIO SUB-SYSTEM

When the mobile user initiates a call, his equipment will search for a local base station. A base station sub-system (BSS) comprises a base station controller (BSC) and several base transceiver stations (BTS), each of which provides a radio cell of one or more channels. Each BTS has at least one of its radio channels assigned to carry control signals in addition to traffic.

The BSC is responsible for the management of the radio resource within a region. Its main functions are to allocate and control traffic channels, control frequency hopping, undertake handovers (except to cells outside its region) and provide radio performance measurements.

Once the mobile has accessed and synchronized with a BTS, the BSC will allocate it a dedicated bi-directional signaling channel and will set up a route to the Mobile services Switching Center (MSC).

3.3.4 THE SWITCHING SUB-SYSTEM

The MSC routes traffic and signaling within the network and interworks with other networks. It comprises a trunk ISDN (Integrated Services Digital Network) exchange with additional functionality and interfaces to support the mobile application. When a mobile requests access to the system it has to supply its IMSI (International Mobile Subscriber Identity). This is a unique number, which will allow the system to initiate a process to confirm that the subscriber is allowed to access it.

This process is called authentication. Before it can do this, however, it has to find where the subscriber is based. Every subscriber is allocated to a home network, associated with an MSC within that network. This is achieved by

making an entry in the Home Location Register (HLR), which contains information about the services the subscriber is allowed.

3.3.5 MOBILITY MANAGEMENT AND SECURITY

Whenever a mobile is switched on, and at intervals thereafter, it will register with the system; this allows its location in the network to be established and its location area to be updated in the HLR. A location area is a geographically defined group of cells. On first registering, the local MSC will use the IMSI to interrogate the subscriber's HLR and will add the subscriber data to its associated Visitor Location Register (VLR). The VLR now contains the address of the subscriber's HLR and the authentication request is routed back through the HLR to the subscriber's Authentication Center (AuC). Some operators also check the mobile equipment against an Equipment Identity Register (EIR), in order to control stolen, fraudulent or faulty equipment.

3.3.6 CALL SET-UP

Once the network accepts the user and his equipment, the mobile must define the type of service it requires (voice, data, supplementary services etc.) and the destination number. At this point a traffic channel with the relevant capacity will be allocated and the MSC will route the call to the destination.

3.3.7 CALLS TO MOBILES

When setting up a call from the fixed network to the mobile the procedure is much the same. First, however, the mobile must be found. This is achieved by means of a paging signal which covers the location area in which the mobile has registered. Mobiles continuously monitor the paging channel and, on detecting a call to them, undertake the access procedure described.

The paging procedure has been designed to facilitate significant battery-saving potential in the handportable. Unless a handportable is used excessively the biggest drain on its battery comes not from the time spent using it, but from the standby cycle as it monitors the paging channel, in case it is being called. In the GSM system the DRX mode allows the mobile, once it has located the paging signal, to synchronize a clock knowing that it will not get another signal until a specified time has elapsed. It can thus power down its circuits for most of the time during standby.

3.4 CELLULAR TELEPHONY IN AFRICA

The telecommunications market in Africa has taken off. For many years, telecommunications has taken a back seat to other infrastructure needs such as transport and electricity. Today, African countries have endorsed the benefit of an effective communication network and cellular telephony offers the unequalled opportunity which benefits both business and personal use.

Cost effective technology is now becoming available to meet the needs that once was considered to be satisfied by fixed-line services. These new technologies include fixed wireless access, mobile telephones, fibre optics and satellite telephone and data. The growth of mobile cellular and other wireless technologies in Africa in the past couple of years has been exponential (Sunday Times, 22 June 2003).

The mobile cellular telephony subscriber based grew by 50% across the African continent in 2000 (ibid). It is forecast that this growth is bound to continue exponentially due to the rapid increase in the take up of pre-paid services.

Further, emerging markets are among the world's highest potential for growth in demand for wireless services (ibid). At the end of 1999, Africa accounted for 2% of the world's total subscriber based. However growth rates for 1999 – 2001 have been over 100% (Sunday Times, 6 April 2003).

Due to their versatility and often inadequate fixed-line coverage, mobile services present a superior communications option for business subscribers. The use of radio frequencies for wireless communication has advanced extremely rapidly over the past few years resulting in an explosion of possibilities for improving communications infrastructures worldwide. In Africa, in particular, wireless technologies are seen as one of the most important ways of addressing the needs of a continent with the least developed telecommunications system in the world.

Wireless networks are of particular importance in developing countries where most people live in a geographic distribution that is better suited to radio technologies. As most people are spread sparsely over the landscape in districts that can cover thousands of square kilometers, traditional cabling is not cost effective, especially when the low usage of lines in these economically underdeveloped areas, is taken into account.

Wireless capacity, on the other hand, can quickly be distributed over many hundreds of square kilometers by erecting one base station in a strategic location, which can be shared efficiently by users as and when required. It is not necessary to know in advance the location and numbers of all the potential subscribers and as demand grows, it is relatively simple to add more capacity to the based stations, and/or increase the base station density when requirements dictate.

With the use of these systems the average cost of installing a new fixed line is being reduced from about $2.000 for the traditional copper cable system, to less that $500 for basic wireless telephony services (Sunday Times, 6 April 2003).

3.5   CURRENT CELLULAR TELECOMMUNICATION INFRASTRUCTURE

There are essentially two main categories of cellular infrastructure, namely analogue and digital.   Like most technologies, analogue is the older of the two and is now been replaced by digital technology.   Africa's slow response to the rest of the world has in this case played a positive role in that the majority of the global cellular networks are digital.   This is because these networks only started once the digital standard was mature enough for the market.

The digital system that exists in Africa and which is the world defacto standard, is GSM.   Two frequency bands are currently used in GSM, namely the 900MHz and the 1800MHz band.   There are about 11 million GSM subscribers in Africa, of which approximately 10 million are from South Africa (Sunday Times, 6 April 2003).

3.6   <u>KEY MARKET PLAYERS IN THE SOUTH AFRICAN CONTEXT</u>

It seems that there is no end to the growth of South Africa's cellphone operators. In June 2003, Vodacom and MTN, both of which produced strong earnings growth for the year to March, indicated that the market is far from saturated (Sunday Times, 22 June 2003).

And, while many other South African industries are finding it increasingly difficult to make inroads into Africa, the continent seems to be a gold mine of opportunity for cellphone companies. Competition in the market has also intensified with the emergence of Cell C and in the race to capture markets in the rest of Africa, where the cost of entry is high but the rewards significant.

Cell C, which operates in South Africa, surpassed even its own projections by reaching more than a million subscribers by the end of its first year of operation in November 2001. Since then, the tally has risen to 1.7 million connections (www.cellc.co.za).

3.6.1 VODACOM GROUP (PTY) LTD.

Vodacom Group (Pty) Ltd., is South Africa's largest company with over 7.5 million subscribers, (60% of South Africa's subscribers), and 500 000 throughout Africa (Sunday Times, Business Times, 22 June 2003). The company was issued with a license in late 1993 and officially began operating three months later in 1994.

UK-based Vodafone Airtouch, the world's largest mobile telecommunications company, owns 31.5% of the company, together with Telkom SA which has a 50% share in the group. Telkom SA Ltd is presently South Africa's sole fixed-line telecommunications operator. Hosken Consolidated Investments (HCI) is a trade union investment vehicle and is controlled by the SA Clothing and Textile Workers' Union (SACTW) and the National Union of Mineworkers (NUM). HCI owns 5% of the Vodacom Group (www.vodacom.co.za).

The Rembrandt Group Ltd., which owns 13.5% of the Vodacom Group, is an investment holding company based in Stellenbosch and derives its income mainly from investments in tobacco products, banking and financial services.

The company claims to cover almost 13 000km's of national roads, about 80% of the country's population and 52% of the total land surface. The company does reach into Africa with 200 000 subscribers in the Democratic Republic of Congo (DRC), 380 000 in Tanzania and 67 000 customers in Lesotho.

3.6.2 MTN

MTN controls 40% of the South African cellular telephony market with 5.22 million subscribers at as February 2002 (www.sagsm.co.za). MTN's license was awarded in 1993 and the company is listed on the Johannesburg Stock Exchange under the umbrella of the M-Cell Group (www.mtn.co.za).

Launched in 1994, MTN's network has approximately 4000 sites covering 19 200km of road, 900 000km^2 of land and providing access to 94.5% of South Africa's population. MTN owns service provider M-Tel and has interests in I-Talk Cellular, Leaf Wireless and New Bucks Holdings.

MTN's other African operations include Uganda, Swaziland, Rwanda, Cameroon and recently Nigeria (www.cellular.co.za).

3.6.3 CELL C

The third cellular network in South Africa is that of Cell C, whose licence was awarded in February 2001 (www.cellc.co.za). Cell C has over 1 million subscribers and expects to a market share of between 15 – 25% by 2006. Cell C's holding company is 3C Communications, 60% of which is owned by Saudi Oger and 40% by CellSaf (www.cellular.co.za), which consists of nine South African companies.

## 3.7   THE SOUTH AFRICAN MARKET

South Africa's population is highly diverse, representing four difference race groups and a myriad of complex cultural and social considerations within each. This segment of the study attempts a brief overview of some of the main issues within the South African context, concentrating on: demographics, levels of education, occupation and employment and income.

3.7.1 DEMOGRAPHICS

According to Statistics South Africa's 1996 Census, South Africa's population is 40.6 million. The biggest population group is the African population group with 30.9 million, followed by the White population with 4.5 million, the Coloured population with 3.6 million and the Indian population group at 1.2 million.

FIGURE 3.2

POPULATION OF SOUTH AFRICA – RACIAL BREAKDOWN
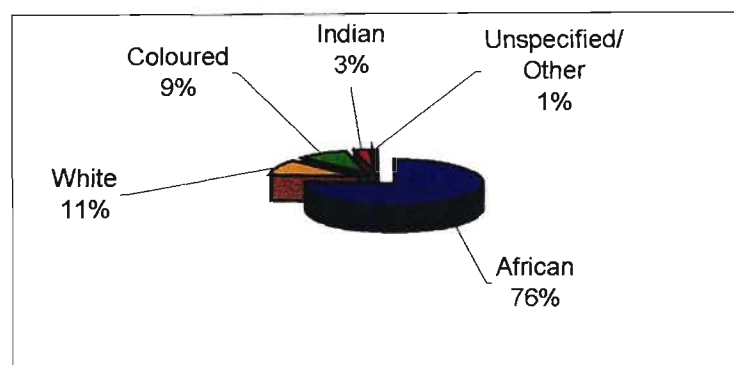
(SOURCE: Census 1996, StatsSA)

What is also of significant interest to the marketer is that fact that 53.6% of the country's population is urbanised. However, there are still disparities between the different race groups. For example, the high rate of urbanisation is specific to that of the Coloured, White and Indian population groups. The African population group, on the other hand, mainly lives in rural areas. This can be attributed to a number of factors, the most important of which is South Africa's policy of apartheid which existed for many years prior to democratisation in 1994.

43

FIGURE 3.3

PERCENTAGE OF PEOPLE IN EACH POPULATION GROUP LIVING IN

URBAN AND NON-URBAN AREAS
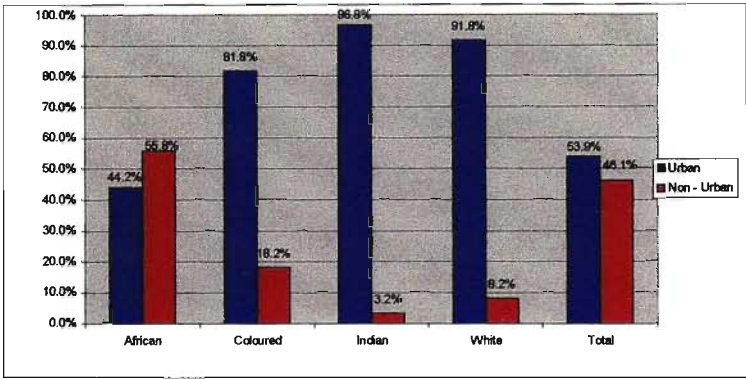
(Source: October Household Survey 1999, StatsSA)

3.7.2 EDUCATION

Just under 20% of the country's population has had no education at all. Twenty-two percent have completed some primary education and only 13% have completed matric. On closer inspection, the most highly educated population groups are Indians and Whites, while 22% of the Black population have had no education at all.

FIGURE 3.4

PERCENTAGE OF THE POPULATION AGED 20 YEARS OR MORE IN EACH

EDUCATIONAL CATEGORY BY POPULATION GROUP
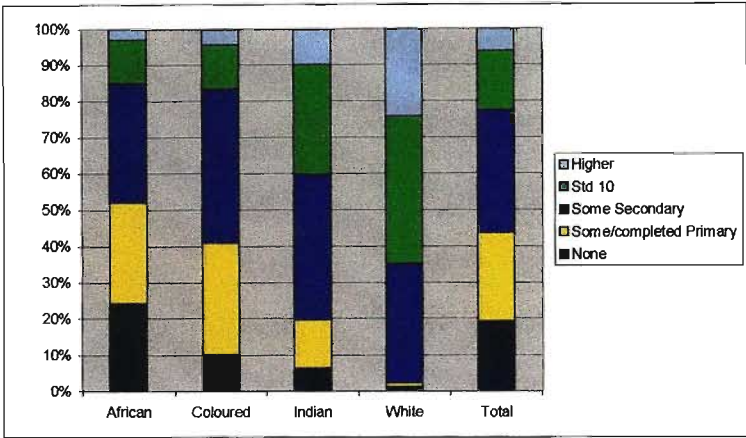
(Source: Census 1996, StatsSA)

3.7.3   OCCUPATION AND EMPLOYMENT

Figure 3.4 shows the unemployment rate by population and gender amongst

those aged 15-65 years.   The table indicates the expanded definition of

unemployment which includes those who have become discouraged job seekers

(those who were unemployed and had not taken active steps to find work in the

four weeks prior to the interview).

45

FIGURE 3.5

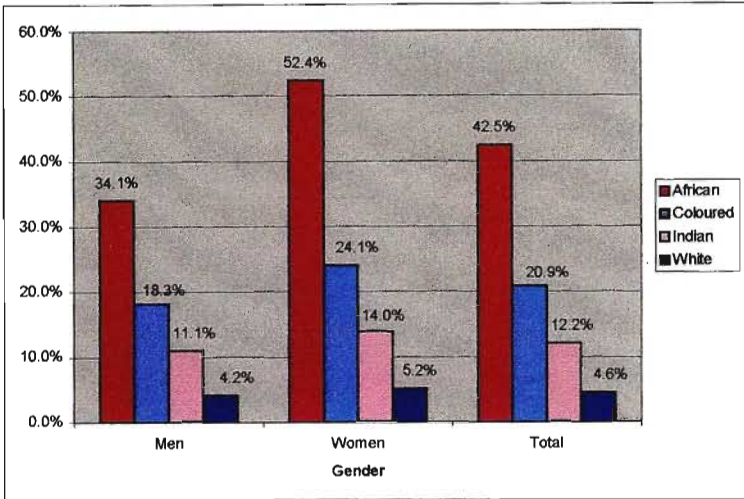## UNEMPLOYMENT RATES (EXPANDED DEFINITION) BY POPULATION GROUP AND GENDER

(Source: Census 1996, StatsSA)

Table 3.1 depicts the income category among the employed by population group and gender as extracted from Census 1996. From the table it is clear that 44.6% of the total population earn below R1 000 per month. Further, Indian men (68.2%) and White men (87.3%) earn above R1501, while the corresponding figures for the African and Coloured population groups are not as favourable. According to the table, there is also a disparity between the earning power of males and females, with males earning considerably more.

TABLE 3.1

INCOME CATEGORY AS A PERCENTAGE BY POPULATION GROUP AND GENDER

	Men				Women				
	African	Colord.	Indian	White	African	Colord.	Indian	White	Total
R0 - 500	25.8	19.4	4.8	3.9	47.5	30.0	8.9	7.6	26.0
R501 - 1000	24.4	20.4	8.8	3.2	21.4	19.5	16.0	6.2	18.6
R1001 - 1500	23.8	21.0	18.3	5.7	12.5	21.9	26.0	10.4	17.4
R1501 - 3500	20.1	27.5	38.4	22.5	13.3	21.5	32.4	40.4	21.7
R3501+	6.0	11.6	29.8	64.8	5.2	7.1	16.7	35.4	16.2

(Source: Census 1996, StatsSA)

3.8   CONCLUSION

The cellular industry in South Africa has grown by leaps and bounds over a short period of time.   This is reflected by the reported success of the three network operators, Vodacom, MTN and Cell C.   Further, the move into Africa seems to be bearing fruits for these operators and recent media reports indicate that further moves are imminent.

As the above discussion has indicated, the South African population is diverse. Issues such as high unemployment rates, low rates of urbanisation and education levels cannot be ignored when investigating this market for in terms of new product development and other related marketing issues.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1   INTRODUCTION

Cooper and Schindler in Business Research Methods (2001: 15) define business research as "…a systematic inquiry that provides information to guide business decisions." In order to achieve this, this exploratory study relied on both primary and secondary data sources.   The following chapter delves into: the research context, the problem and its setting, objectives of the study, hypothesis statements, the research design, the sources and collection of data and the analysis and presentation of data.

4.2   THE RESEARCH CONTEXT

The purpose of this research is to determine the various consumer behaviour patterns of undergraduate university and technikon students with regard to their cellular purchase decisions.

While there is strong evidence that the cellular market is still growing in South Africa, the purpose of this research is to understand the needs and wants of this segment of the population with the aim of providing networks with an insight to the development of new products and services to suit this particular segment.

Further, this market segment, represents a growing and lucrative future market. This can be deduced simply because it is this segment which is striving to further their educational needs and will later become professionals with greater access to income.

4.3 THE PROBLEM AND ITS SETTING

The aim of research is to solve a problem and this segment of the study investigates the problems and sub-problems of this investigation.

4.3.1 THE STATEMENT OF THE PROBLEM

To analyse the various needs and wants of undergraduate university and technikon students with the aim of providing vital information for the future developments of products and services.

4.3.2 THE STATEMENT OF THE SUB-PROBLEMS

SUB-PROBLEM 1

The undergraduate university and technikon market segment is largely seen by the marketer as a single, homogenous grouping with a shared economic background. Such an assumption leads to an inadequate understanding of the market segment.

SUB-PROBLEM 2

Socio-economic dimensions within this market segment are often not clearly understood. This results in inadequate marketing messages being sent to the consumer.

SUB-PROBLEM 3

The undergraduate university and technikon market segment is not being adequately targeted by marketers, yet this segment is growing and will later have greater access to disposable income as professionals.

SUB-PROBLEM 4

The development of brand loyalty to this segment is also not seriously considered. This is a serious oversight, as this segment is the cellular consumer of the future.

SUB-PROBLEM 5

Undergraduate university and technikon students are highly brand conscious, irrespective of their economic background.

4.4 **OBJECTIVES OF THE STUDY**

This study was undertaken with the following objectives in mind:

- To determine the student consumer profile in terms of their cellular services consumed

- To identify possible barriers to the consumption of cellular services

- To determine ways to overcome these barriers and thus increase consumer base

- To evaluate advertising efforts made by the various network providers and comment on their effectiveness in terms of the emerging student market

- To identify ways of targeting the student as a consumer

4.5 **HYPOTHESIS STATEMENTS**

HYPOTHESIS 1

The undergraduate university and technikon market segment is not a single, homogenous grouping with a shared economic background.

HYPOTHESIS 2

Socio-economic dimensions within the undergraduate university and technikon market segment are important facets to sending out the correct message to the consumer.

HYPOTHESIS 3

The undergraduate university and technikon market segment is not being adequately targeted by marketers.

HYPOTHESIS 4

The undergraduate university and technikon market segment is highly brand loyal.

HYPOTHESIS 5

Undergraduate university and technikon students are highly brand conscious, irrespective of their economic background.

4.6   RESEARCH DESIGN

The research design is the blueprint for the collection, measurement, and analysis of data (Cooper and Schindler, 2001: 134).   From this, it can be deduced that the research design is of vital importance in answering the questions, which originate from the research problem.   The design strategies, sampling design and measurement design are further discussed.

4.6.1 DESIGN STRATEGIES

Cooper and Schindler (2001: 134) simplify the various descriptors of a research design into eight main areas, as discussed below:

- Degree of Research Question Crystallization

  A study may be viewed as either formal or exploratory.   Exploratory studies tend towards loose structures with the objective of discovering future research tasks.   A formal study, on the other hand, begins where an exploratory study leaves off. This study is of an exploratory nature, to identify areas of future research.

- Method of Data Collection

  There are primarily two methods of data collection: monitoring (where the subjects are observed without attempting to elicit responses), or interrogation/communication studies (were responses are vital and subject responses are collected by either personal or impersonal means). This study used interrogation as a means to collect data via a questionnaire completed by subjects.

- Researcher Control of Variables

  This defines the ability of the researcher to manipulate the research variables in an experiment, whilst having no control in an ex-post facto design. The design variables in this study were ex-post facto, with the research reporting on the variables, with no ability to alter them.

- The Purpose of the Study

  The essential difference between a descriptive and a causal study lies in the objectives. A descriptive study is concerned about finding out details, for example, who, what, where and why. A causal study looks at trying to explain relationships between the variables. This study is both descriptive and causal in that it identifies all the relevant variables and finds relationships between them.

- The Time Dimension

  A study can be either: cross sectional (which looks at a snapshot in time), or a longitudinal study (which is repeated over an extended time period). This study was a cross sectional study since it elicited the response of students during a certain time period.

- The Topical Scope

  Topic scope refers to either a statistical study or a case study. This study is a statistical study as it attempts to capture the characteristics of the sample population.

- The Research Environment

  Research can be conducted in actual field conditions or in laboratory conditions. This study was conducted in the field.

- Subject's Perceptions

  Often, subjects can subtly or dramatically influence the outcome of a research design, which researchers need to be vigilant of.

4.6.2 SAMPLING DESIGN

The sampling method used in this study was a simple random sample. The population set comprised of university and technikon students in Durban. Simple random sampling was used to select university students from the University of Natal and the M.L. Sultan Technikon – Steve Biko Campus.

Students were chosen randomly across all years of study, from different faculties, across different race groups and gender lines to complete the designed questionnaire.

4.6.3 MEASUREMENT

Cooper and Schindler (2001.203) define measurement in research as assigning "…numbers to empirical events in compliance with a set of rules."

This means selecting empirical events, developing a set of mapping variables and applying the mapping rules. The goal of measurement is to support or refuse hypotheses.

- Data Types

  The researcher identified empirical events, developed mapping variables and applied the mapping rules when developing the questionnaire. The above four classification types were used to gather information in the questionnaire as follows:

  - ➢ Nominal data – gender, type of degree being completed, to determine the academic institute, use of a cellular telephone, etc.

  - ➢ Ordinal data – students were asked to rate the elements of network performance in terms of "Weak", "Fair" or "Good"

  - ➢ Interval data – students were asked to select intervals that best describe their income, cellular telephone expenditure, etc

  - ➢ Ratio data – students were asked their age.

- Sources of Measurement Difference

  The ideal study should be designed and controlled for precise and unambiguous measurement of variables, but complete control is unattainable and error does occur. These can be classified into the following categories:

  - ➢ Error Sources

    - ❖ The respondent – opinion differences that affect measurement e.g. student employment status.

❖ Situational factors – conditions that place strain on the interview can have serious effects. For example, students who honestly did not want to answer the questionnaire, may have made random choices which were not true to themselves.

❖ The Instrument – a defective instrument can be confusing and ambiguous. The researcher is to eliminate confusing and ambiguous questions but during the data capture period there were a few instances that showed cases of confusion in the answers.

- Characteristics of Sound Measurement

Validity and reliability was achieved through:

➤ Random sampling as opposed to conveyance sampling, which is probabilistic in nature, ensuring greater accuracy.

➤ The questions were structured and semi structured thus making for more accurate interpretations and analysis.

- Bias Control

Bias are introduced in the following areas:

➤ The writer's perception

➤ Sampling population

➤ Research Instrument

Special care was taken by the researcher to ensure that the discussions and conclusions are based on the data collected and analysis and not on his perception. The sampling population will be as wide as possible to ensure that the above bias is removed.

4.6.4 MEASUREMENT SCALES

Cooper and Schindler (2001: 228) define scaling as a "...procedure for the assignment of numbers (or other symbols) to a property of objects in order to impart some of the characteristics of numbers to the properties in the question."

There are three types of measurement scales: rating, ranking or catergorisation. All three-measurement scales were used in the formulation of the questionnaire (see Appendix 1).

- Rating – Section D, question 15 is an example of a rating scale. Students are asked to rate the quality levels of their network providers. There are various types of rating scales, most of them were used in the questionnaire.
  - ➢ Simple Category scale – Question 11
  - ➢ Multiple Choice, single response – Question 9
  - ➢ Multiple Choice, multiple response – Question 34
  - ➢ Likert Scale – Question 16

- Ranking - Section F, questions 28 to 31 are examples of ranking scales. Students are asked to rank reasons for having chosen their specific network providers. An example of a type of ranking scale used in the questionnaire is:

  ➢ Comparative Scale – Question 17

- Catergorisation - Section A, question 1 is an example of a catergorisation scale. Students are asked to caterogise themselves in terms of gender.

4.7   THE SOURCES AND COLLECTION OF DATA

This section of the investigation focuses on two important aspects of the research methodology of any design: the sources and method of data collection.

4.7.1 DATA SOURCES

There are many types of information sources, some much more valuable than others. These are generally catergorised as:

- Primary data sources – these include original works of research, raw data, memos, letters, complete interviews, laws, regulations, court decisions, etc. In this study the questionnaire was the source of primary data.

- Secondary data sources – these are interpretations of primary data. They include textbooks, encyclopedias, handbooks, newspaper articles, etc. In this study secondary data consisted of an interpretation of the primary data from the questionnaire, information from textbooks, and newspaper articles.

- Tertiary data sources - these are interpretations of secondary data as well as information retrieved from web sites, as was the case in this study.

4.7.2 DATA COLLECTION

Research design can be classified by the approach used to gather primary data. There are really two methods that can be used, observation or communication with subjects.

Communication with subjects can be in the form of:

- Personal interviews,
- Telephonic interviews and
- Self-administered surveys.

The researcher used the last option to gather the required primary data. A questionnaire was complied and hand-delivered to students at lectures. With the assistance of lecturers, the researcher used the last 10 minutes of lecture time, to get students to complete the questionnaires. This method ensured a high rate of return of questionnaires (95%).

4.8   ANALYSIS AND PRESENTATION OF DATA

Once the questionnaires were returned the information was captured electronically using Microsoft Excel. The information was then tabulated and plotted onto bar graphs, histograms and pie charts for the purposes of presentation.

Cross tabulations were performed to determine relationships and trends between the various variables.

4.9   CONCLUSION

The research methodology of any study is of vital importance to the validity of the study itself. As a continuation of this, the following chapter focuses on an analysis of the results and findings.

CHAPTER FIVE

ANALYSIS AND FINDINGS

5.1 INTRODUCTION

The ensuing chapter focuses on the results obtained from the questionnaire.

The presentation of the results are grouped into the following categories:

- General Information

- Income / Employment

- Cellular Telephone Preferences

- Cellular Network Providers

- Cellular Package Types

- Brand Awareness

- Internet Access

- Future Needs

These categories will be broken down into greater detail to investigate the consumer consumption patterns within the cellular industry.

5.2   GENERAL INFORMATION

The following is a discussion and analysis of "general" information supplied by respondents. This includes an analysis of: the different academic institutions the respondents are registered at, respondents' gender, age, language, academic composition and academic year of study.

5.2.1 ACADEMIC INSTITUTION

Two hundred and twenty-four students from two academic institutions completed the questionnaire. Ninety percent (201) were from the University of Natal, whilst the remainder, from the Durban Institute of Technology - Steve Biko Campus. Figure 5.1 shows a graphical representation of the statistics.

FIGURE 5.1

ACADEMIC INSTITUTION BREAKDOWN
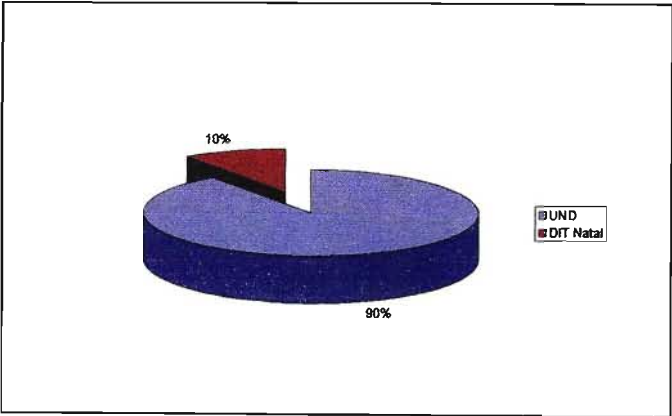
5.2.2 GENDER ANALYSIS

Dividing the 224 according to gender (Figure 5.2) shows that 57% of the participants were male.

FIGURE 5.2

GENDER BREAKDOWN
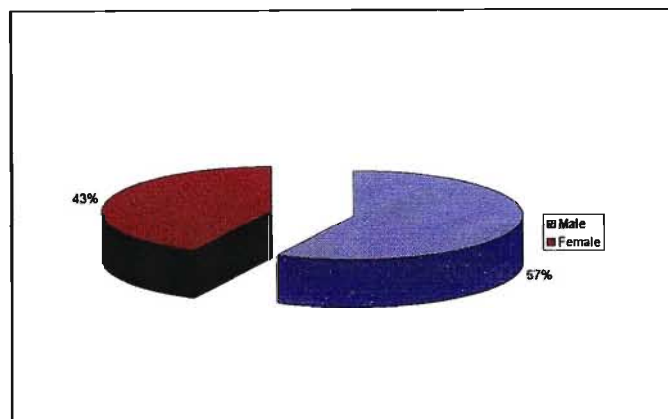
5.2.3 AGE ANALYSIS

The majority of the students who completed the questionnaire (55%), were below twenty years of age. Thirty-one percent were between the ages of 21 and 23, 7% were between 24 and 25, 4% were between 26 and 30 and 3% were older that 31 (as depicted in Figure 5.3).
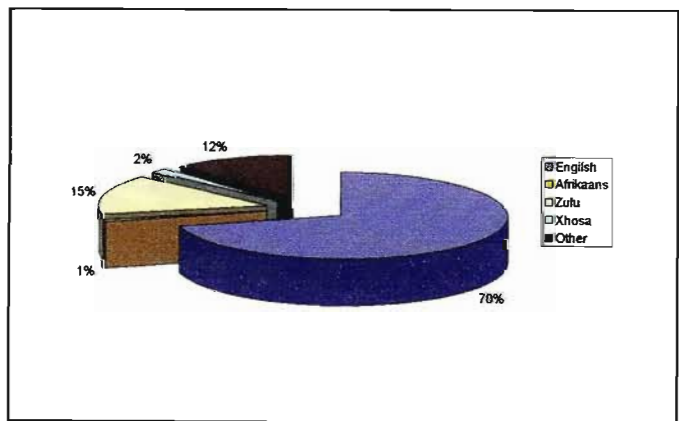
FIGURE 5.3

AGE (YEARS)
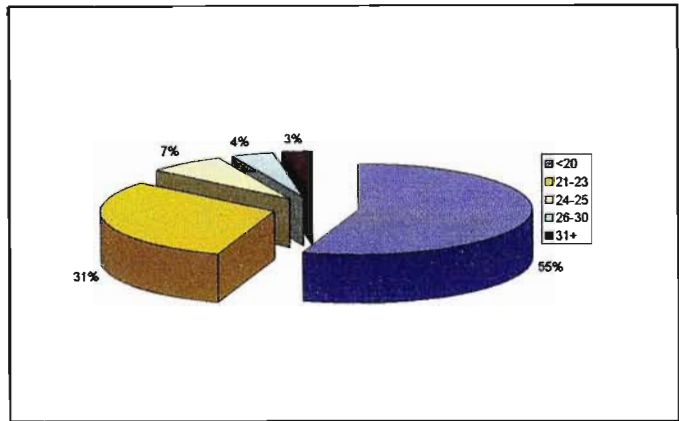
5.2.4 LANGUAGE ANALYSIS

Figure 5.4 shows the language composition of students. From this, it is apparent that 70% of the students used English as their home language, followed by Zulu (15%), 2% Xhosa and 1% Afrikaans. Twelve percent of the respondents spoke other languages.
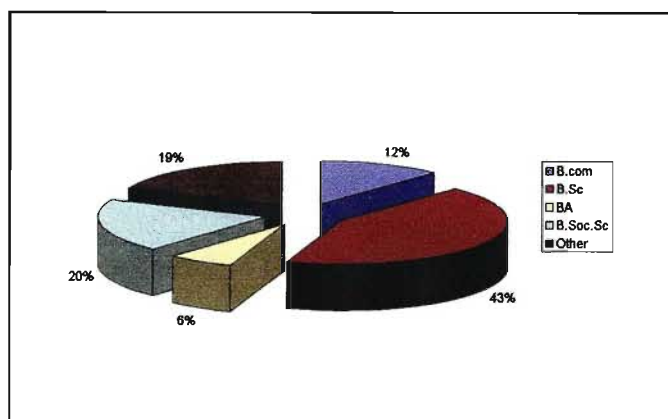
FIGURE 5.4

LANGUAGE BREAKDOWN

5.2.5 ACADEMIC COMPOSITION

Of the participants that completed the questionnaire, 43% were studying towards a B.Sc. degree, 20% B.Soc.Sc, 12% B.Comm., 6% B.A. and 19% towards degrees and diplomas not mention as an option in the questionnaire. This can be seen in Figure 5.5.

FIGURE 5.5

DEGREE OR DIPLOMA BEING STUDIED

5.2.6 ACADEMIC YEAR OF STUDY

Figure 5.6 shows that 13% of the participants were 1st year students, 52% 2nd year, 18% 3rd , 13% 4th year, while 4% were completing degrees greater than 4 years.

67

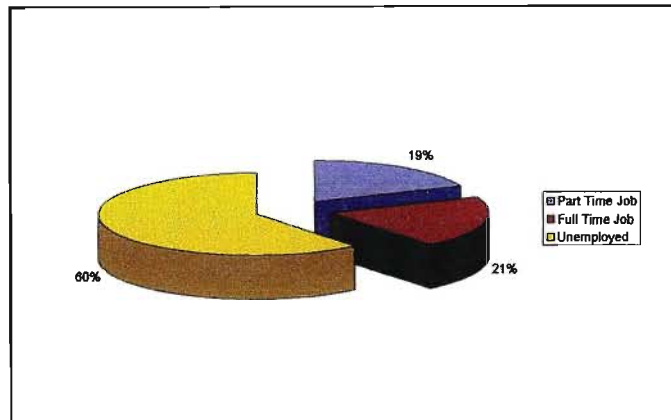# FIGURE 5.6

ACADEMIC YEAR OF STUDY
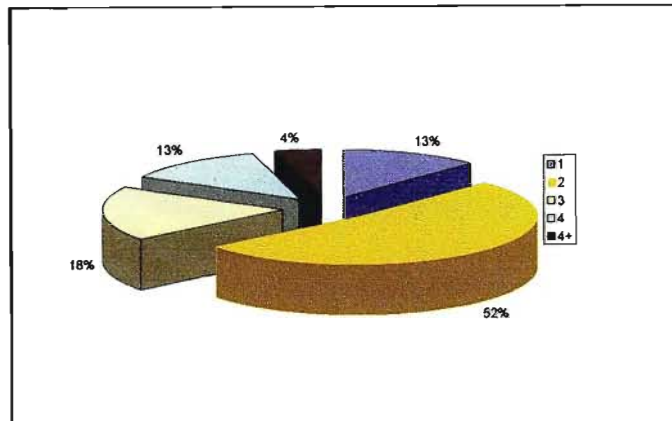
5.3 EMPLOYMENT HISTORY

The ensuing analysis lends itself to a discussion of respondents' employment history, including: employment status, source of income, monthly income and party responsible for fees.

5.3.1 EMPLOYMENT STATUS

A majority of 60% of students were unemployed, with 21% having fulltime jobs and the remaining 21% being employed on a part-time basis as shown in Figure 5.7.
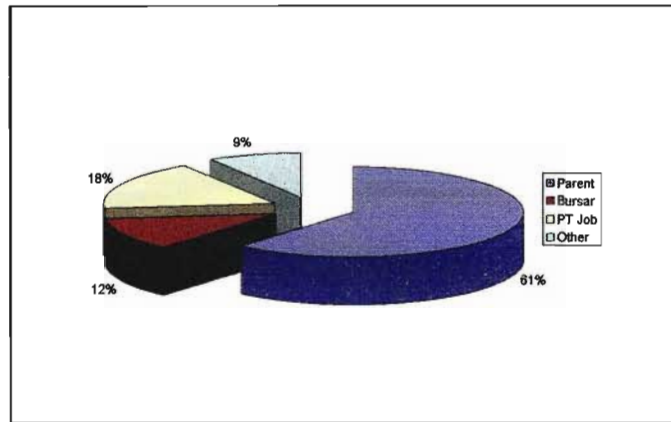
FIGURE 5.7

STUDENT EMPLOYMENT STATUS

5.3.2 SOURCE OF INCOME

Figure 5.8 shows the students' source of income, with the main income source being that of parents (61%). Eighteen percent of the students had part-time jobs and 12% were studying on bursaries.
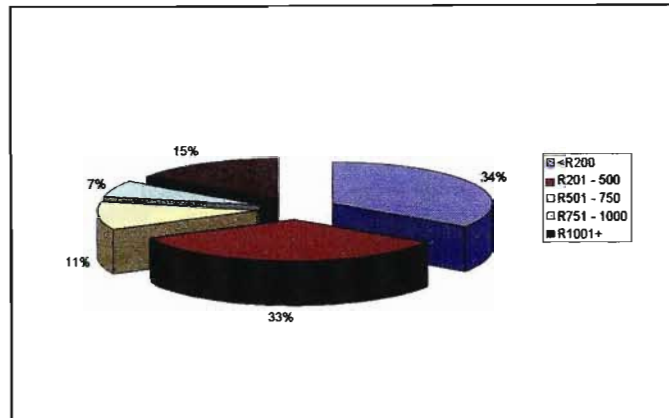
FIGURE 5.8

STUDENT INCOME SOURCE

5.3.3 STUDENT MONTHLY INCOME

Figure 5.9 shows respondents income ranging from less than R200 to more than R1000. The majority of the students (34%) get less that R200 per month as an allowance, followed by 33% receiving between R201 and R500, 11% between R501 and R750, 7% between R751 and R1000 AND 15% receiving greater that R1000.
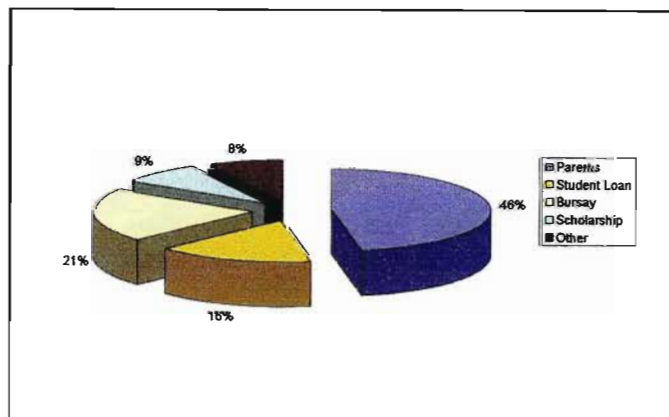
FIGURE 5.9

STUDENT'S MONTHLY INCOME

5.3.4 PARTY RESPONSIBLE FOR THE STUDENTS FEES

Parents were the main contributor for the fees liable by the students. Parents paid for 46%, bursaries for 21%, 16% by student loans and 9% by scholarships as shown in Figure 5.10.

FIGURE 5.10

PARTY RESPONSIBLE FOR FEES.

5.4   CELLULAR PREFERENCES

In this section of the study, respondents' cellular preferences are discussed, focusing on: cellular telephone usage, cellular telephone handsets used, age of handsets and most admired handset brands.

5.4.1 CELLULAR TELEPHONE USAGE

A staggering 93% of the 224 students who participated in the study use cellular telephones as shown in Figure 5.11.   These 207 subscribers are divided into the three cellular network providers as follows: Vodacom 56%, MTN 35% and Cell C with 8%.   These figures are shown in Figure 5.12.
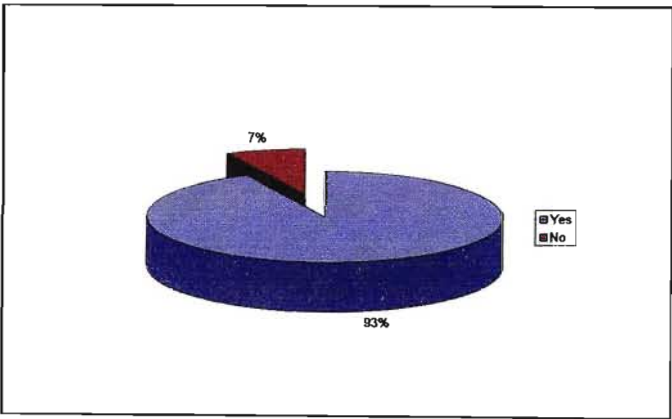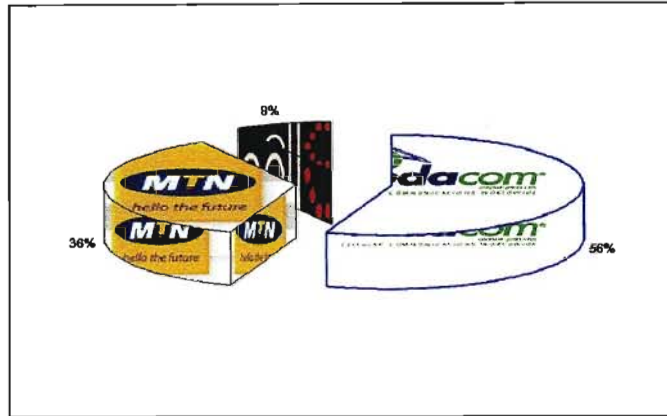

FIGURE 5.11

CELLULAR TELEPHONE USAGE

FIGURE 5.12

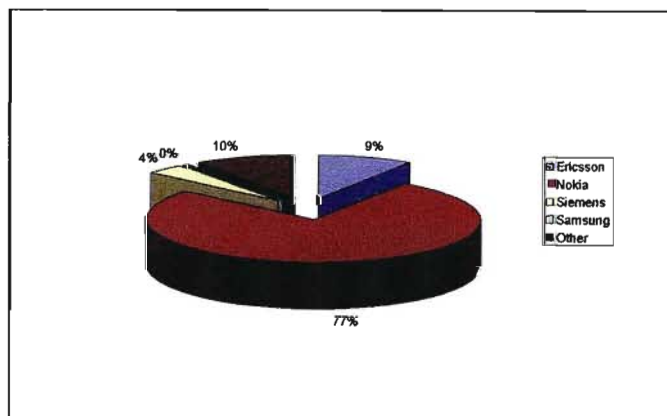## SUBSCRIBER BREAKDOWN INTO NETWORK PROVIDERS

5.4.2 CELLULAR TELEPHONE HANDSETS

The brand of cellular telephone handset used included Nokia, Ericcson, Siemens, Samsung, Alcatel, Motorola and Phillips. The more popular brands can be seen in Figure 5.13, with Nokia (77%) being the most popular handset choice.
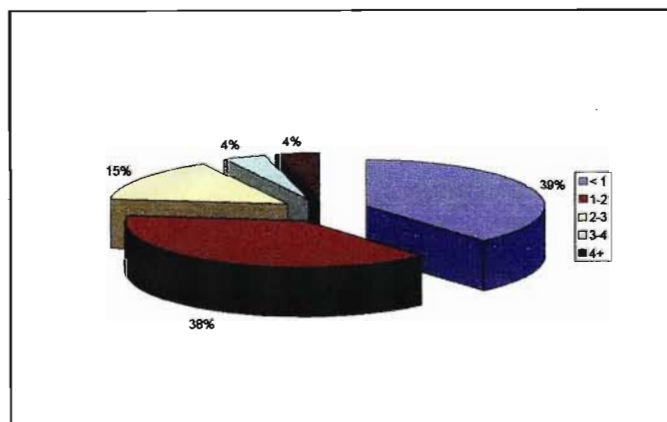
FIGURE 5.13

MOST POPULAR HANDSET

The handsets ranged from new to over 4 years, with the bulk of the handsets (39%) being under a year old. On the other extreme, as shown in Figure 5.14, 38% of the handsets were over 4 years old.

FIGURE 5.14

AGE OF HANDSET

One of the questions in the questionnaire, (Question 14): "What brand of cellular phone would you like to own", was used to gain an insight into the future handset needs of students. Here again, the most popular handset choice was Nokia with 78%, followed by the Samsung with 9% and third was Ericsson with 6% (as depicted in Figure 5.15).

FIGURE 5.15

MOST ADMIRED HANDSET BRANDS
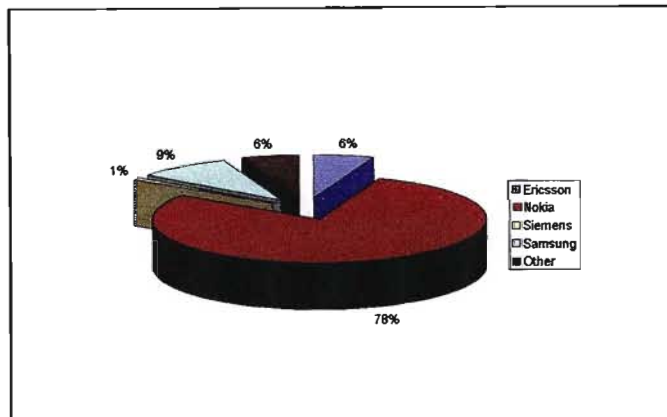
5.5   NETWORK PROVIDER PERFORMANCE

All network providers across the world use similar indicators to benchmark their performance in comparison with each other, both, in the country of service as well as to international network providers. The facility used to do this is referred to as Key Performance Indicators (KPI's) and comprise of the following (www.cellular.co.za)

- Cellular Coverage – the percentage of the target area over which the network operator can provide services of an acceptable standard.

- Voice Quality – the quality of all calls made, commonly called mobile originating calls (MOC), and received, commonly called mobile terminating calls (MTC). The indicators are measured and compared to standards set by the network operator.

- Call Setup Success Rate (CSSR) – every call that is attempted is either successful or fails. The number of successful calls are divided by the total number of calls attempted to give rise to a statistic that is called the CSSR. Network Providers in first world countries boast a figure in excess of 95%. This includes South Africa.

- Dropped Call Rate (DCR) – every successful call can be terminated in three ways: by the originator, by the recipient or it could fail. All failed calls are divided by the total number of successful calls to give the statistic DCR. Leading network providers have a DCR of less that 2% over their networks.

These Key Performance Indicators were included in the questionnaire to determine what the perceptions of the students were with regards to them. Respondents were asked to rate each of the above in terms of: "weak", "fair" and "good". The results were then accumulated as follows:

5.5.1 CELLULAR COVERAGE

As shown if Figure 5.16, Vodacom subscribers felt that Vodacom had the best coverage, with 56.9% rating it as "good". This was followed by MTN with 50% and Cell C with 11.76%. Cell C was perceived as having the weakest coverage with 29.41% of their subscribers rating their coverage as "weak".
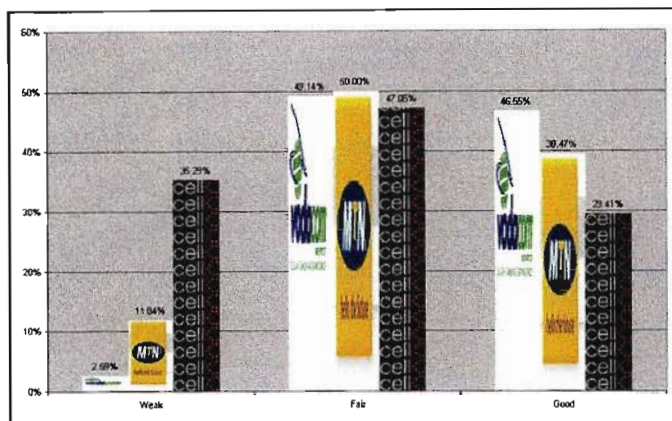
FIGURE 5.16

NETWORK COVERAGE ANALYSIS
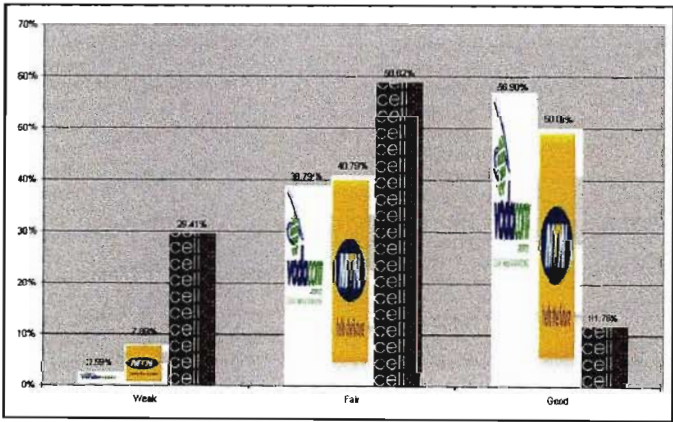
5.5.2 VOICE QUALITY

Figure 5.17 shows that 46.55% of Vodacom subscribers rate their voice quality as "good", 49.14% rate it as fair and only 2.59% rate it as "weak". The second-best network was MTN with 39.47% of their subscribers rating their voice quality as "good", 50% as "fair" and 11.64% as "weak".

Almost 30% of Cell C subscribers felt that their voice quality was "good", 47.06% as "fair" and 35.29% rated their voice quality as "weak".
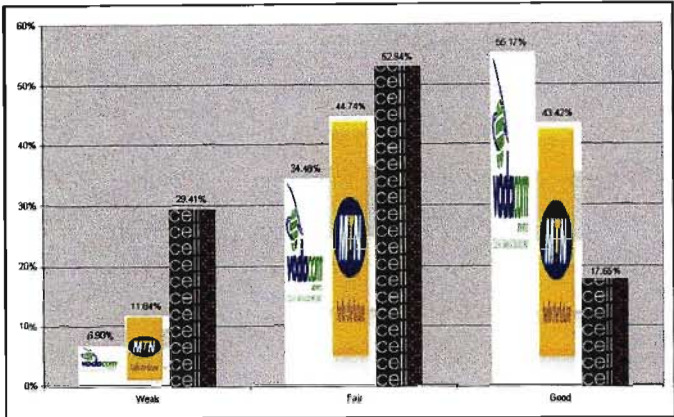
FIGURE 5.17

NETWORK VOICE QUALITY ANALYSIS

5.5.3 CALL SETUP SUCCESS RATE (CSSR)

Figure 5.18 shows that 55.17% of Vodacom subscribers rate their CSSR as "good", 34.48% rate it as "fair" and 6.90% rate it as "weak". The second-best network (according to respondents) is MTN with 43.42% of their subscribers rated their CSSR as "good", 44.74% as "fair" and 11.84% as "weak". 17.65% of Cell C subscribers felt that their CSSR was "good", 52.94% as "fair" and 29.41% rated their CSSR as "weak".

FIGURE 5.18

NETWORK CSSR ANALYSIS

5.5.4 DROP CALL RATE (DCR)

Figure 5.19 shows that 42.24% of Vodacom subscribers rate their DCR as "good", 42.24% as "fair" and 11.21% as "weak". The second-best network was Cell C with 17.65% of their subscribers rating their DCR as "good", 64.71% as "fair" and 17.65% as "weak". Nearly 32% of MTN subscribers felt that their DCR was "good", 46.05% as "fair" and 22.37% rated their DCR as "weak".

FIGURE 5.19

NETWORK DCR ANALYSIS
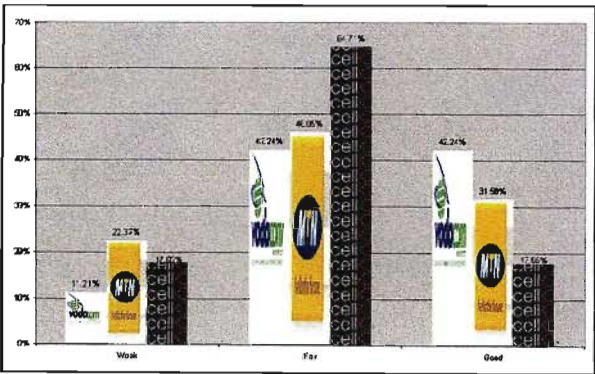
5.5.5

THE BEST NETWORK

After having asked all the respondents about their current network provider, in terms of key performance areas, they where asked to identity one of the 3 network provider which they believed was the best. As shown in Figure 5.20, the majority (65%) felt that Vodacom was the best network provider, followed by MTN with 28% and finally Cell C with 7%.

FIGURE 5.20

BEST NETWORK PROVIDER
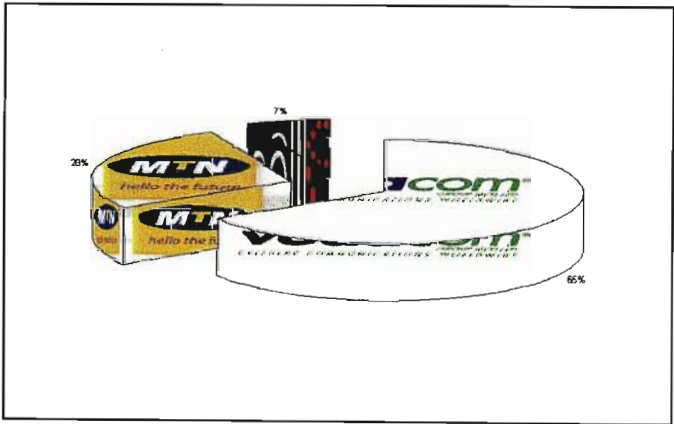
5.6   CURRENT CELLULAR TELEPHONE PACKAGE ANALYSIS

The study analysed cellular telephone packages with the specific focus on: the popularity of contract or prepaid packages, company or private issued cellphones and contracts, the length of subscription to cellular services, the average monthly expenditure of subscribers, the use of short message services (SMS), "missed calls" and picture messaging.

5.6.1 CONTRACT OR PREPAID PACKAGES

A contract package is a defined agreement between the network operator and the purchaser of the telephone. The agreement includes a predetermined monthly rental for the airtime to be used over a term period of normally 24 months, plus a per minute call rate and other services. These can include itemised billing charges, short message services (SMS) and data rates. Subscribers wishing to sign a contract must provide: proof of earnings, an identity document and formal residency.

On the other hand, the prepaid option is merely paying for a bundle of services before they can be used. This option does not need proof of earnings, or formal residency and can be terminated at any time by either the subscriber or the network provider.   Figure 5.21 shows that 77% of candidates surveyed utilised prepaid services, whilst only 23% had fixed contracts with network providers.
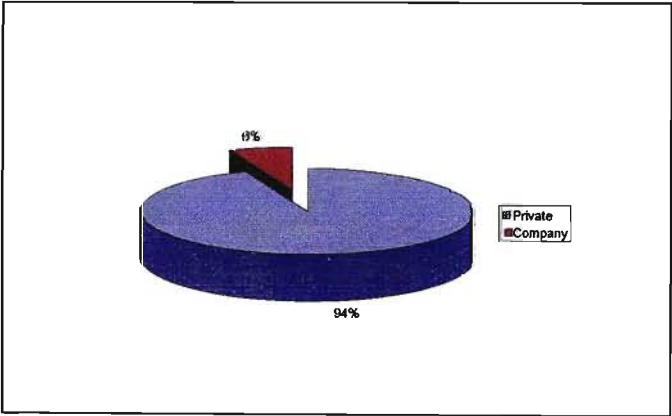
81

FIGURE 5.21

PRE-PAID VS. CONTRACT SUBSCRIBERS
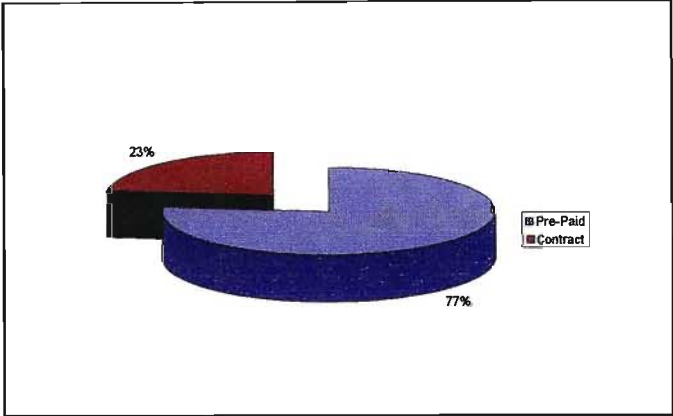
5.6.2 COMPANY ISSUE OR PRIVATE ISSUE

Figure 5.22 shows that 94% of respondents were responsible for their own subscriptions, whilst 6% have their cellular telephone accounts paid by their employers.

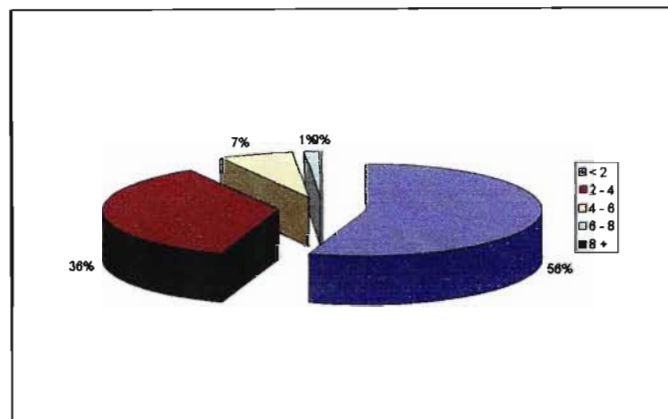# FIGURE 5.22

COMPANY OR PRIVATE ISSUE

5.6.3 LENGTH OF SUBSCRIPTION TO CELLULAR SERVICES

Figure 5.23 shows that 56% of respondents have been using cellular services for under 2 yrs, 36% between 3-4 yrs, 7% between 4-6 yrs and 1% between 6-8yrs.

FIGURE 5.23

PERIOD OF SUBSCRIPTION

5.6.4 AVERAGE MONTHLY EXPENDITURE OF SUBSCRIBERS

The monthly expenditure includes the subscription fees charged by the three network providers for contract subscribers whilst for prepaid subscribers it includes all the airtime purchased. Figure 5.24 shows that 33.82% spend less that R50, 53, 14% spend between R51-R200, 9.18% between R201-R500, 2.9% spend between R500-R1000 and a small minority, which spends over R1001. This implies that about 12% of the students spend more that 50% of the total rand value spent.

FIGURE 5.24

AVERAGE MONTHLY EXPENDITURE
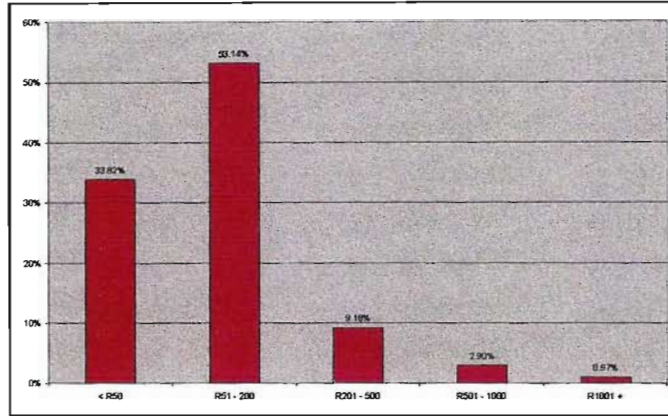
5.6.5 SHORT MESSAGE SERVICES (SMS) ANALYSIS

SMSs are a favourite amongst students with 98% of them using the service as illustrated in Figure 5.25. The daily SMS usage is shown in Figure 5.26, with nearly 34% sending less than two per day, 44.33% between 2-5, 16% between 6-10, 3.45% between 11-20 and 1.97% sending in access of 20 SMSs per day.
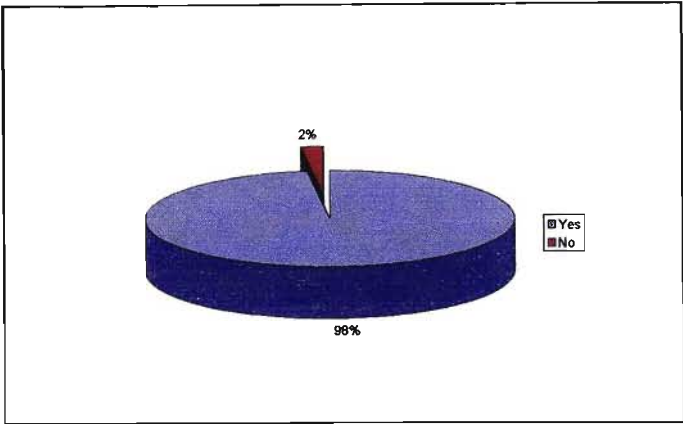
FIGURE 5.25

SMS USAGE ANALYSIS

FIGURE 5.26

NUMBER OF SMS'S SENT PER DAY
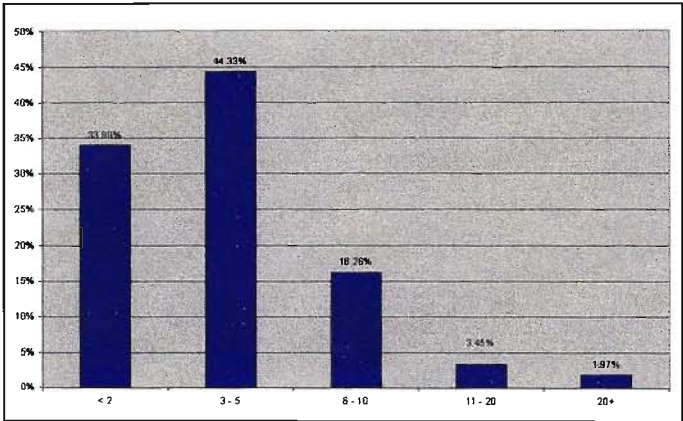
5.6.6 PLEASE CALL ME (MISSED CALLS)

This feature initially saw subscribes call or "buzz" others, with the intention of the other party then returning the call. The subscriber normally sending the missed call could not afford the initial call and thus would use the missed call as a request for the other party to call them back. The party returning the missed call either has an office telephone or could afford making a cellular call.   This feature has now been marketed as the "Please Call Me" feature, which is currently used by 81% of the survey group as shown in Figure 5.27.

FIGURE 5.27

"PLEASE CALL ME" USAGE
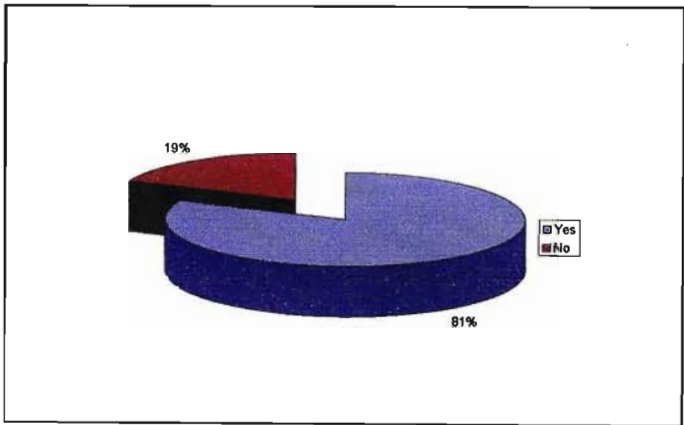
Figure 5.28 shows the popularity of the "Please Call Me" service offered by the network operators. Over 34% of the sample send less than 2 per day, 13.25% between 3-5, 4.82% between 6-10 and 6.63% send between 11-20 "Please Call Me" per day.

FIGURE 5.28

"PLEASE CALL ME" POPULARITY
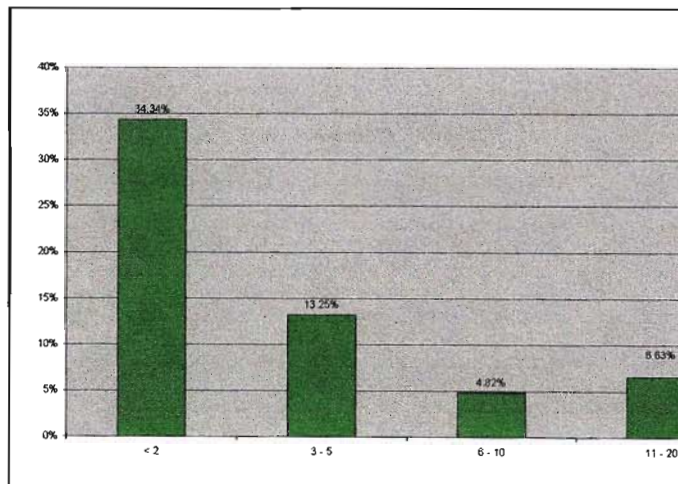
5.6.7 PICTURE MESSAGING

This is a fairly new feature offered by Vodacom and MTN. The feature is only supported by the newer cellular telephones in the market. The results of the survey show that only 40% of the respondents utilise the service (Figure 5.29).

FIGURE 5.29

PICTURE MESSAGING USAGE

Figure 5.30 shows that a minimal amount of picture messages are being sent per day. Of the 40% that use picture messages, 62.96% send 1 per day, 24.69% send 2, 8.64% send 3, 2.47% send 4 and only 1.23% send 5 picture messages per day.

FIGURE 5.30

NUMBER OF PICTURE MESSAGES SENT PER DAY
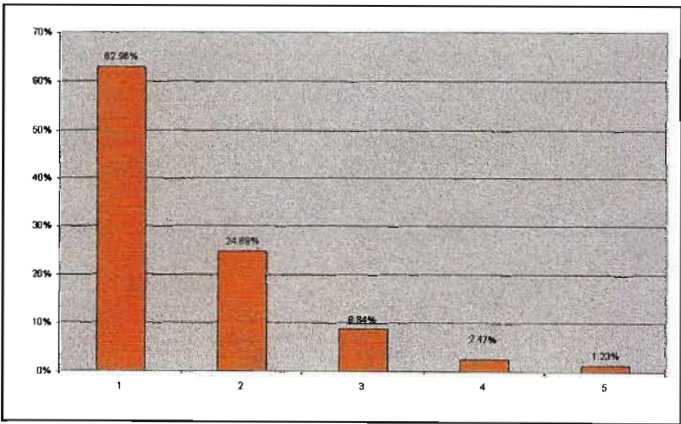
5.7   BRAND AWARENESS

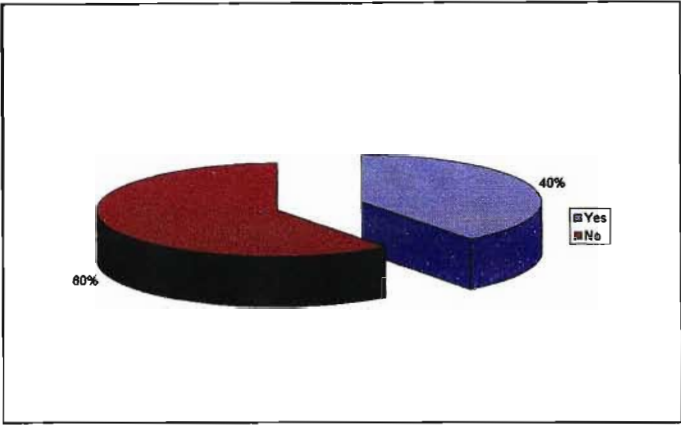It was important for the survey to identify the medium that was used by network providers to market their products. The most effective medium used to position the various products and the brand, was that of television.

Television advertisements proved to be the most penetrative medium with nearly 23%, 24% and 27% of the respective network operator subscribers gaining information on the brand from television advertisements for Vodacom, MTN and Cell C respectively. Interestingly, sports sponsorships, which are supported by all three networks, were sighted as least popular brand building exercises by respondents. This can be seen in Figures 5.31 to 5.33.

5.7.1 VODACOM

The second most popular vehicle for Vodacom was their newspaper campaign, followed by radio advertisements and recommendations by friends as shown by Figure 5.31.

FIGURE 5.31

VODACOM BRAND AWARENESS BY MEDIUM
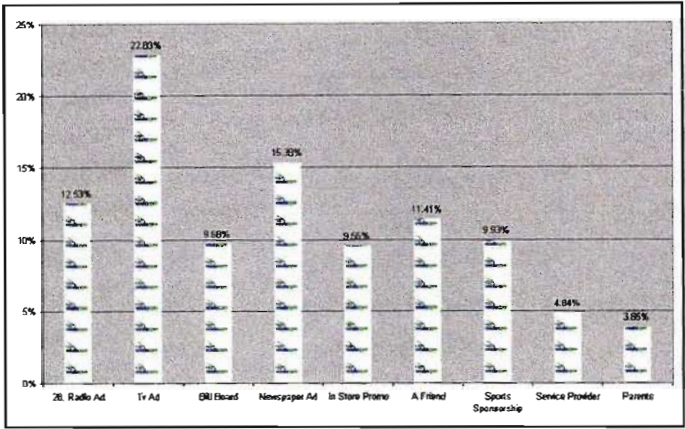
5.7.2 MTN

MTN subscribers felt that their newspaper campaign was the second most effective advertising tool, followed by billboards, friends and in-store promotions. Here again, sports sponsorships weren't seen as a branding point (as depicted in Figure 5.32).

FIGURE 5.32

MTN BRAND AWARENESS BY MEDIUM
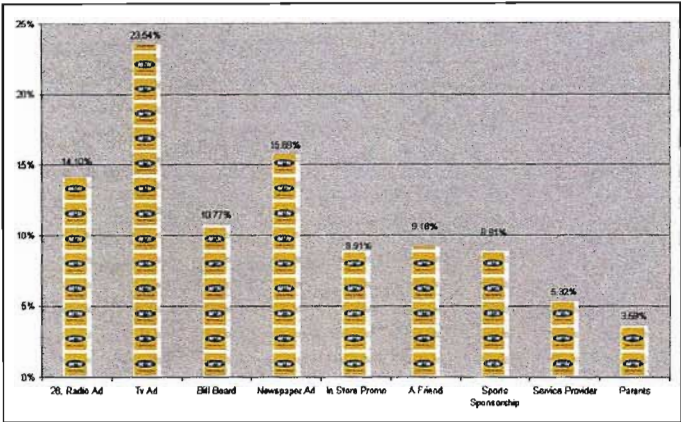
5.7.3 CELL C

Cell C's radio campaign was more popular than their newspaper advertisements.

This was followed by billboards, in-store promotions and recommendations by

friends as shown in Figure 5.33.

FIGURE 5.33

CELL C BRAND AWARENESS BY MEDIUM
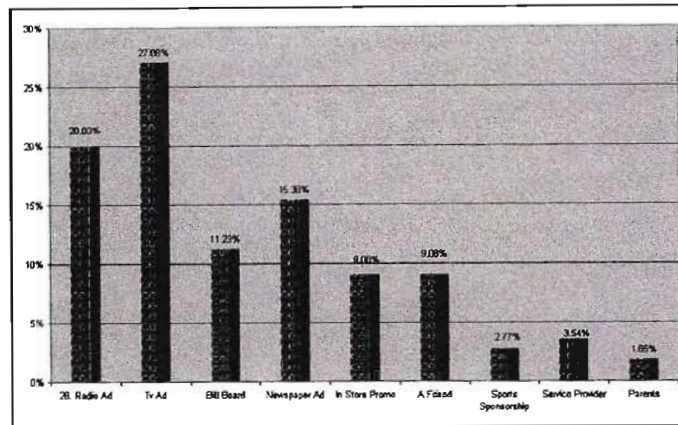
5.7.4 REASONS FOR NETWORK PROVIDER CHOICES

From Figure 5.34 below, the following is evident:

- 46% of Cell C subscribers believed that their chosen network offered cost-effective packages

- 22% of Vodacom subscribers felt that the network was a preferred brand

- Vodacom and MTN subscribers were of the opinion that their chosen network fared well as far as network quality was concerned

- 15% of Cell C subscribers felt that the network provided better phones. This compared favourably to the other 2 networks

- 4% of Vodacom subscribers, 2% of MTN subscribers and 0% of Cell C felt that their brand is an endeared brand

- Sports sponsorship was one of the least reasons used by subscribers when choosing their network providers, with Vodacom 3%, MTN 2% and Cell C 0%.

FIGURE 5.34

REASONS FOR NETWORK CHOICE
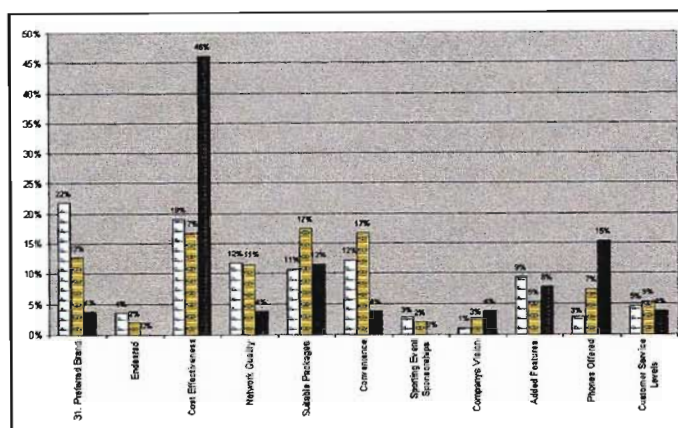
5.8   THE INTERNET

An analysis of the varied use of the Internet lends itself to the following discussion, which includes an examination of: general Internet usage, access venue, Internet applications used, time spent surfing the Internet and subsequent costs arising from the usage of the Internet.

5.8.1 INTERNET USERS

Ninety eight percent of respondents in the sample use the Internet as shown in Figure 5.35.

FIGURE 5.35

INTERNET USAGE
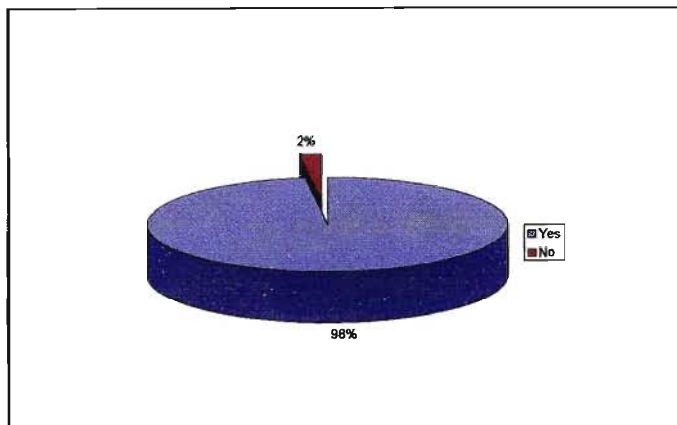
Vodacom, MTN and Cell C students surf the Internet most from campus and at home, whilst a small percentage of Vodacom and MTN subscribers surfed at Internet cafes and other venues as shown in Figure 5.36.

FIGURE 5.36

INTERNET ACCESS VENUE
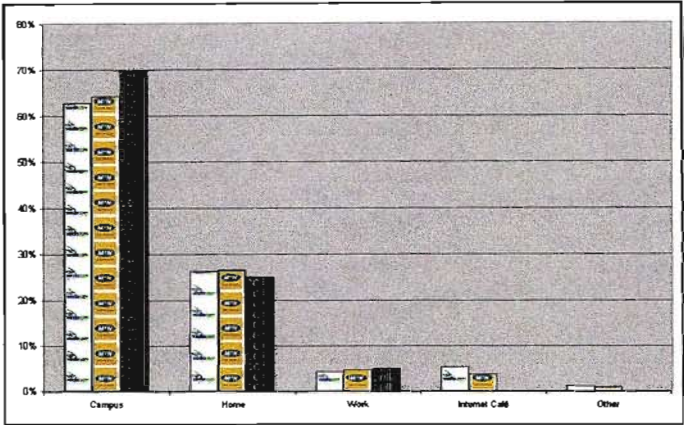
The general trend in terms of Internet applications can be seen in Figure 5.37, with the most common being electronic mail, followed by searchng for information, socialising and shopping being the least common application. The bulk of Vodacom subscribers used electronic mail, with a greater percentage of Cell C subscribers using the Internet for socialising.

FIGURE 5.37

INTERNET APPLICATIONS USED
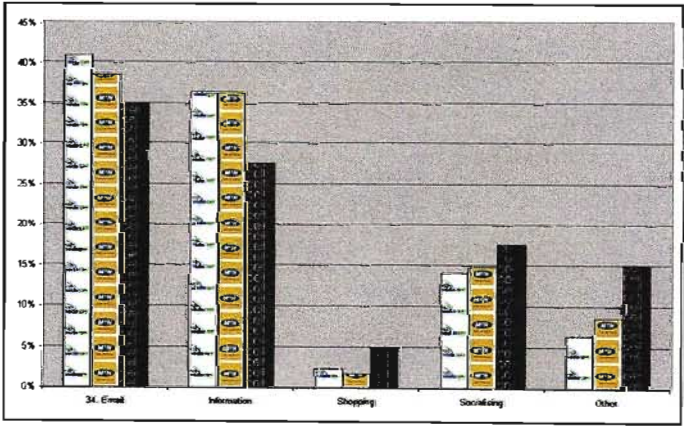
Figure 5.38 looks at the time spent by students surfing the Internet. The bulk of the respondents, 40.24% spend less that 1 hour per week, 76.89% of the students spend less than 5 hours whilst 8.17% spend more that 21 hours per week (approximately 3 hours per day).

FIGURE 5.38

TIME SPENT SURFING THE INTERNET
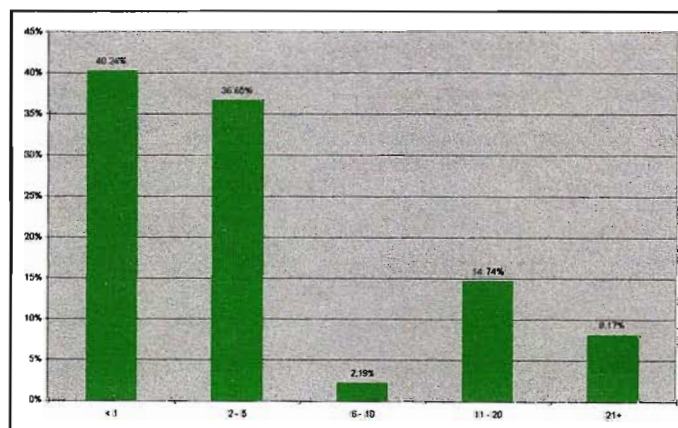
FIGURE 5.39

INTERNET SUBSCRIPTION AND CALL COSTS
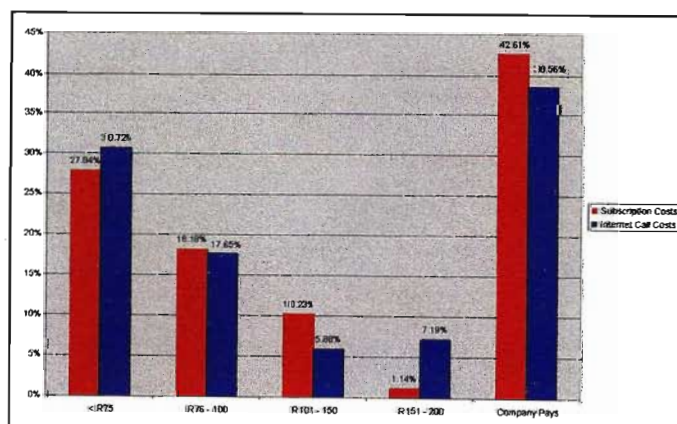
Figure 5.39 shows the costs associated with Internet subscriptions, 42.61% of which are paid for by companies, 27.84% cost less than R75 per month whilst 1.14% cost between R151 and R200 per month. The telephone call cost associated with surfing the Internet range from 30.72% less than R75 to 7.19% between R151 and R200. Some students, 38.56% have the luxury of having their sponsorship companies pay the telephone costs.

Ninety five percent of students surf the Internet using Telkom telephones to establish their connections, with only 5% using their cellular telephones, as shown in Figure 5.40. Twenty eight percent of students felt that they would use their cellular telehones in the future to surf the Internet, as shown in Figure 5.40

FIGURE 5.40

TELKOM VS. CELLULAR TELEPHONE USAGE FOR SURFING THE INTERNET
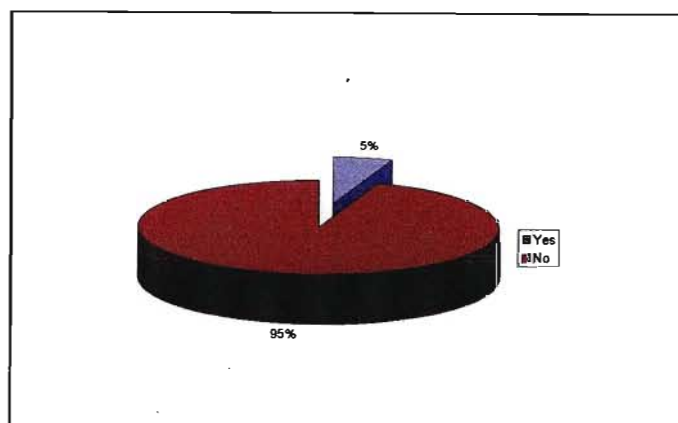
FIGURE 5.41

FUTURE USE OF CELLULAR TELEPHONES FOR SURFING THE INTERNET
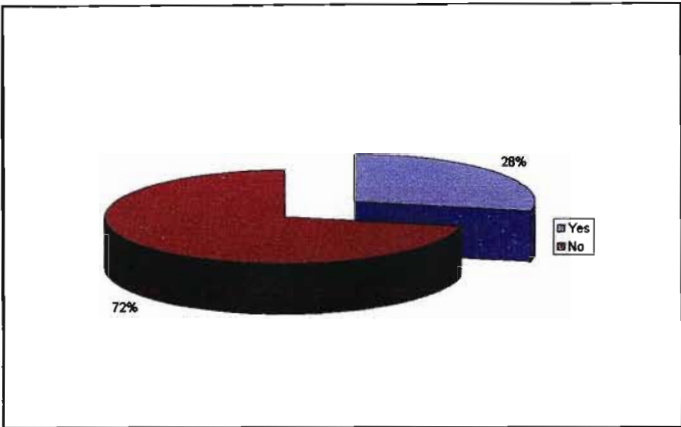
FIGURE 5.42

REASONS FOR NOT USING CELLULAR TELEPHONES FOR SURFING THE
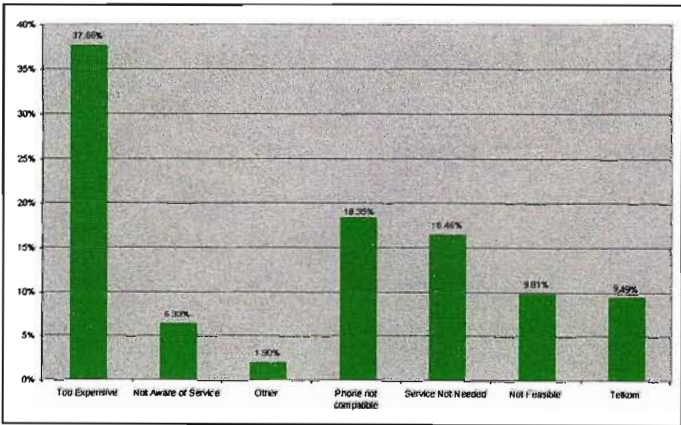
INTERNET

Figure 5.42 looks at the reasons given by students for not using their cellular telephones for surfing the Internet. Over 38% felt that it was too expensive, 18.35% said that their phones were not compatible, 16.46% said that they did not need the service, 9.81% felt that it was not feasible, 9.49% preferred Telkom and 6.33% did not know that it was possible to use their cellular telephones to surf the Internet.

5.9   **FUTURE CELLULAR SERVICE EXPECTATIONS**

Students were asked what future expectations they had in from their providers. An overwhelming amount, as shown in Figure 5.43 felt:

- Contracts should include more free airtime minutes
- Call rates per minute should be lower
- Better cellular handsets should be given on packages
- Subscriptions fees should be decreased
- SMS lenghts should be greater than the current 160 characters and,
- SMS rates should be cheaper.

FIGURE 5.43

FUTURE CELLULAR EXPECTATIONS
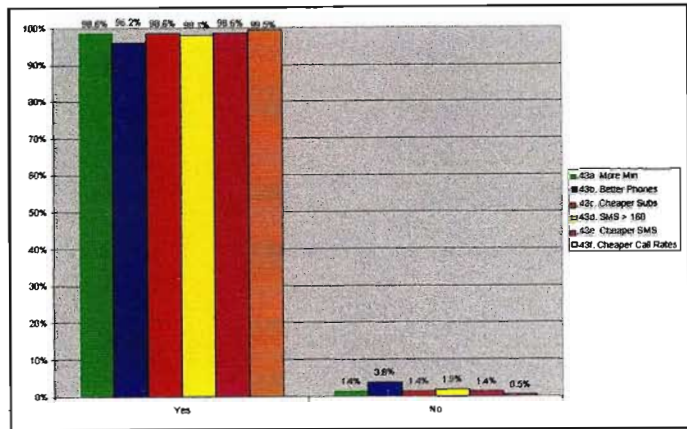
5.10 COMMENT WITH REGARD TO HYPOTHESIS STATEMENTS

- HYPOTHESIS 1

The undergraduate university and technikon market segment is not a single, homogenous grouping with a share economic background.

The findings of the study indicate that the above hypothesis is correct. The sample used shows that there is no shared economic background. For example, the source of disposable income was not static. In some cases, students had part time jobs, in others they were unemployed or living on scholarships

100

- HYPOTHESIS 2

Socio-economic dimensions within the undergraduate university and technikon market segment are important facets to sending out the correct message to the consumer.

Findings with regard to the above are not conclusive. This study was not able to determine a link between socio-economic dimensions and marketing messages.

- HYPOTHESIS 3

The undergraduate university and technikon market segment is not being adequately targeted by marketers.

The findings of this dissertation do not adequately prove that this market segment is either sufficiently or insufficiently being targeted by marketers.

- HYPOTHESIS 4

The undergraduate university and technikon market segment is highly brand loyal.

While findings are not conclusive, the results of the study show, for example, that Vodacom subscribers are loyal to their network. However the same cannot be said, in the main, for Cell C subscribers. Therefore the question of brand loyalty cannot be fully answered.

- HYPOTHESIS 5

Undergraduate university and technikon students are highly brand conscious, irrespective of their economic background.

Results do indicate that this market segment is highly brand conscious, irrespective of their economic background. Brands such as Nokia, and to a lesser extent Ericsson are converted, admired and wanted. Nokia, especially, seems to have developed itself into a much sort after brand.

5.11 CONCLUSION

The results provided an invaluable insight into the needs and wants of students from their cellular networks. These results have important implications for the future provision of market offerings.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1   INTRODUCTION

This chapter attempts to draw conclusions and recommendations from a marketing point of view, taking into consideration the results of the survey, as explained in the previous chapter.

Key marketing implications are discussed under the following headings:

- General

- Employment history

- Cellular preferences

- Network provider performance

- Current cellular telephone package analysis

- Brand awareness

- The Internet, and

- Future cellular service expectations

6.2   KEY MARKETING IMPLICATIONS

The following is a discussion of some of the key marketing implications arising from the study.

6.2.1 GENERAL

The analysis of the general information supplied by respondents including: gender, age, language, degree or diploma being studied and year of study, leads to the following recommendations:

- More than half (55%) of those interviewed were under the age of 20. There are a variety of marketing implications to this. For example, if this segment of the population is to be targeted then the marketing message needs to be suitable and appropriate for those under 20.

- It would serve the marketer best if the marketing message was in English, as 70% of the respondents used English as their home language. Such insight is crucial to marketers, especially in a country with eleven languages. Marketing messages in different languages are expensive and often unnecessary in the face of research.

- The undergraduate student market is highly viable not only for the present, but also for the future. This is derived from the degrees and diplomas they have chosen to study at tertiary level.

For example, the majority, in this sample (43%) was studying towards B.Sc degrees, which generally lead to high-paying jobs. Therefore, it is the author's contention that garnering brand loyalty at this stage in the lives of these students, will augur well for future brand loyalty.

6.2.2 EMPLOYMENT HISTORY

The following marketing recommendations and conclusions can be drawn, based on the following:

- While the majority of respondents are unemployed, their main source of income is from their parents. This implies that despite the fact that the respondents are not earning, their parents are obviously in a position to support them completely. This support from parents also extended itself to respondent's fees where 46% of respondents admitted to their parents being responsibly for paying their fees.

The conclusion reached is that the majority of students, despite not providing for themselves, have access to disposable income, part of which is channeled towards their cellular needs such as making phone calls, buying air time, etc. The significance for the marketer is that this segment of the population has already bought into the cellular market and to all intents and purpose, will continue to do so.

- While 67% of respondents have access to less than R500 per month, this study has found that students still do budget for their cellular needs. The marketing significance to this is that despite having access to a relatively small disposable income, students have the need and want for cellular services and will therefore budget for it. On another note, the study found that 26% of respondents have access to R500 per month. It is clear that with greater access to disposable income, the more one would spend on goods and services, including that of cellular communication, as an example.

6.2.3 CELLULAR PREFERENCES

- Despite not being self-employed and relying on their parents, 93% of students had their own cellular telephones. As reiterated above, it is the researcher's contention that this segment of the market is extremely viable because despite the demands on their small disposable income, the urgency to want and use a cellular telephone is extremely high. In other words, students seem to find a way to finance their cellular communication costs.

- The study has also found that 56% of respondents were Vodacom subscribers. This augurs well for the network, but certainly isn't the end for the other two networks, viz. MTN and Cell C. Marketers to MTN and Cell C interested in growing their market share, would be best put to studying the various perceptions students have with regard to Vodacom.

- Nokia is the most used and admired handset with 77% of respondents identifying strongly with the brand. While it was outside the scope of this study to delve into reasons for this, it would be prudent for the marketers of other cellular telephones to study the popularity of Nokia as a brand and then devise their own marketing strategy.

This particular segment of the market seems to be highly brand conscious and Nokia is definitely seen as a preferred brand.

- Seventy-five percent of respondents owned handsets that were less than 2 years old. This result is significant in that the assumption would have been that students would have received hand-me-down handsets from parents and other family members. However, the results of this study indicate that somehow this segment of the market is sourcing out new phones.

There could be many reasons for this. One of which being, that when taking out new contracts parents could be handing over their new phones to their adult children who, because they are more brand conscious, would want newer, modern cellular telephones.
The marketing implication is that marketers may now need to look at the needs and wants of dependant children and not that of the subscriber, when strategising on cellular packages.

6.2.4 NETWORK PROVIDER PERFORMANCE

- Vodacom subscribers themselves rated the network as being the best overall.
  They also rated the network highly in terms of network coverage, voice
  quality, call setup success rates and low dropped call rates.
  Meanwhile, Cell C subscribers rated their own network as being worst overall,
  in the same categories as mentioned above. The marketing implication of
  this is that Cell C would have to seriously examine the quality of their services
  with the aim of improvement or that of changing incorrect perceptions.
  While MTN rated second, the network wasn't seen as being outstanding in
  any particular category. Therefore, MTN would be advised to improve their
  services to their subscribers.

6.2.5 CURRENT CELLULAR PACKAGE ANALYSIS

- The majority of the respondents used pre-paid packages. Although, it wasn't
  within the scope of this study to delve into reasons for this, the author
  contends that pre-paid packages are cheaper and therefore more cost-
  effective for students who live on a small budget.

Further, the availability of air time cards in affordable denominations, make pre-paid packages a more attractive option. Therefore, marketers would be best advised to improve pre-paid packages and devise marketing strategies that would target this market segment seeing as pre-paid packages are extremely popular.

- The undergraduate student market is new and this study has found that the majority of students have had access to cellular services only in the last two years. Therefore marketers would be advised to nurture this segment, and use the opportunity to build strong brand loyalty and awareness as this segment could develop into network-loyal consumers of the future.

- From a financial point of view, this segment of the market is viable, with over 53% of respondents spending between R51 to R200 per month on cellular costs. This is highly significant to the marketer. Far from being not able to spend money on cellular communication, this segment is spending a sizable amount of their disposable income on cellular telephones costs.

- Short Message Service's (SMSs) and "Please Call Me" features are used by extensively by this segment of the market. A suggestion to marketers would be to investigate this further and perhaps include these features into tailor-made packages for this segment.

Examples of these would be to increase the number of free SMSs sent a day, as well as to allow "Please Call Me" facilities between networks.

- This study had found that picture messaging is not popular, with very few of the respondents utilising this function. It is the author's contention that SMSs and Please Call Me features fulfill a need that picture messaging doesn't. Therefore, it is the author's contention that the results of this study indicate that undergraduate student's do not see a need or want in this particular service.

6.2.6 BRAND AWARENESS

Millions of rands are spent each year by cellular networks in marketing exercises. This marketing is done via television, radio, newspapers, billboards, in-store promotions, etc. The results of this survey with regard to brand awareness, lead to the following marketing implications and conclusions:

- In the case of all three networks, television advertising was cited as the primary way in which respondents gleaned information on the networks and their various market offerings. Based on these results, media planners would be well advised to pay more attention to the television medium and develop advertisements, which specifically target this segment of the market.

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As an added feature, future research could also delve into the specific programmes such a segment of the population does enjoy and then place television advertisements strategically.

- Newspaper and radio advertisements were placed second and third respectively, with regard to media mediums chosen by networks to market their messages to consumers. Again, to gain a better insight into which media mediums would best suit this market, marketers should research the different radio programmes and newspapers consumed by this segment and then place advertisements and marketing messages accordingly.

- What is of significance to the marketer is that across the board, respondents did not pick up marketing messages or branding exercises via sports sponsorships. Taking into consideration the large amount of ad spent on sports events, marketers may be better off if they were to target this segment via other mediums as there could be very little return.

- While Vodacom was seen as the preferred brand, it is interesting to note that newcomer, Cell C was perceived as being more cost-effective than the other networks. This is significant as the cash-strapped consumer may be pushed in the direction of Cell C despite results from this study which shows that respondents' perceptions were that Cell C's network quality was not up to scratch. Therefore, it is recommended that MTN and Vodacom revisit their pricing strategies and investigate why the student population believes that Cell C is more cost effective.

- Respondents also believed that Cell C was able to offer better cellular telephones. As discussed earlier, the type and model of cellular telephones used is very important to this market segment which seems to be highly brand conscious. Any network that is perceived to offer better cellular telephones, would attract this market with ease. Again, it is recommended that a thorough study of Cell C's cellular telephone offers needs to be examined by the other two networks.

6.2.7   THE INTERNET

- While a high percentage of respondents spend a great deal of time per day on the Internet for the purpose of checking their electronic mail, doing information searches for their studies or socialising, they do so from their campus computer centers. It is only a small percentage that accesses the Internet from home.   .

  Of interest to the marketer, in terms of new product development, only 28% would consider using their cellular telephones to surf the Web. Reasons cited include: the perception that surfing the Internet via a cellular telephone would be very expensive, current handsets not being compatible to the technology needed, and the service not serving either a want or a need.

  From a marketing point of view, these results are significant as there is very little point in marketing a service to a segment that sees no value in it. However, some time must be spent in investigating the perceptions regarding surfing the Internet on ones' cellular telephone, including that of cost.

6.2.8 FUTURE CELLULAR SERVICE EXPECTATIONS

- Expectations from all respondents are high. Virtually all respondents wanted added free airtime minutes, lower call rates, better cellular handsets on packages, lower subscription fees, greater SMS lengths and cheaper SMS's. These expressed needs are important to the marketer as they can be used to develop future packages.

6.3 **CONCLUSION**

The undergraduate student market is viable, but not homogenous. Within this market segment there are different language groups, income levels and cellular needs and wants, not just in terms of networks, but also in terms of cellular telephones themselves. This segment is highly brand conscious and it is not easy to predict changes in the market.

However, the market is viable and with further study, specific packages could be tailor-made to suit their needs and wants from both cellular provider and cellular telephone.

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PLEASE TICK (✓) WHERE APPROPRIATE

Section A : General Information

1 Gender

Male		Female

2 Age

≤ 20	21 - 23	24 - 25	26- 30	31+

3 Home Language

English	Afrikaans	Zulu	Xhosa	Other

4 Which academic institute are you currently studying at ?

UND	UDW	DIT (Natal)	DIT(ML Sultan)

5 Year of Study

1	2	3	4	4+

6 Degree / Diploma being completed

B Comm.	BSc.Eng.	BA	B Soc. Sc.	Other

Section B : Income / Employment

7 Party responsible for student's fees

Parents	Student Loan	Bursary	Scholarship	Other

8 Employment status of student

Part Time		Full Time		Unemployed

9 Source of income of student

Parents	Bursar	P/ Time Job	Other

10 Monthly income of student

< R200	R201 - 500	R501 - 750	R751 - 1000	R1001 +

Section C : Cellular Telephone

11 Do you use a cellular telephone ?

Yes		No

12 What brand of cellular telephone are you currently using ?
(Enter the model of telephone in the box, e.g. Nokia 6150)

Ericsson	Nokia	Siemens	Samsung	Other

13 How old is your current telephone ?

< 1 yr	1 - 2yrs	2 - 3yrs	3 - 4yrs	4yrs +

14 What brand of cellular telephone would you like to own ?
(Enter the model of telephone in the box, e.g. Nokia 6150)

Ericsson	Nokia	Siemens	Samsung	Other

Section D : Cellular Network

15 To which cellular network do you subscriber ?

Vodacom		MTN		Cell C

16 How do you rate your cellular network provider in the following areas ?

a. Coverage (Do you get a signal all the time ?)

Weak	Fair	Good

b. Voice quality (Do calls often "break up"?)

Weak	Fair	Good

c. Call setup success rate (Do you often have to redial numbers?)

Weak	Fair	Good

d. Dropped calls (Do you often "lose" or drop a call?)

Weak	Fair	Good

17 In your opinion which is the best cellular network?

Vodacom	MTN	Cell C

Section E : Package Type

18 Is your current subscription contract or pre-paid ?

Contract	Prepaid

19 Is your current subscription private or company issued?

Private	Company Issued

20 How long have you been a cellular subscriber?

< 2 yrs	2 - 4yrs	4 - 6yrs	6 - 8yrs	8yrs +

21 Average monthly amount spent on your cellular telephone bill -
(Including subscription and airtime purchased for pre-paid)

< R50	R51 - 200	R201 - 500	R501 - 1000	R1000 +

22 Do you use Short Message Services(SMS)?

No	Yes

23 If yes, how many SMS do you send per day?

< 2	3 - 5	6 - 10	11 - 20	20 +

24 Do you use the "Call Me" or "Missed Call" options ?

No	Yes

25 If yes, how many do you use per day?

< 2	3 - 5	6 - 10	11 - 20	20 +

26 Do you use picture messaging ?

No	Yes

27 If yes, how many do you use per day?

1	2	3	4	5+

Section F : Brand Awareness (You may tick more than 1 option if necessary)

28 Which of the following contact points have made you aware
of VODACOM as a cellular network?

Radio Ad	TV Ad	Billboard	Newspaper Ad	
In store Promotion		A Friend	Sports Sponsorship	
Service Provider		Parents		

29 Which of the following contact points have made you aware
of MTN as a cellular network?

Radio Ad	TV Ad	Billboard	Newspaper Ad	
In store Promotion		A Friend	Sports Sponsorship	
Service Provider		Parents		

30 Which of the following contact points have made you aware
of CELL C as a cellular network?

Radio Ad	TV Ad	Billboard	Newspaper Ad	
In store Promotion		A Friend	Sports Sponsorship	
Service Provider		Parents		

31 Why have you chosen your particular cellular network?

Preferred Brand	Endeared Brand	Cost Effective
Networks Quality	Suitable Packages	Convenience
Sporting Event Sponsorship	Company's Vision	Added Features
Cellular telephones offered	Customer Service Levels	

Section G : Internet Access

2 Do you have access to the Internet ?

Yes	No

3 If "yes", where do you access the Internet from?

Campus	Home	Work	Internet Café	Other

4 What applications do you use the Internet for? (You may tick more than one answer).

Email	Information	Shopping	Socialising	Other

5 How much time do you spend on the Internet per week?

< 1hrs	2 - 5hrs	6 - 10hrs	11 - 20hrs	21hrs+

6 What does your monthly subscription to the Internet cost you?

< R75	R76 - 100	R101 - 150	R151 - 200	Company Pays

37 What do your Internet related telephone calls cost per month?

< R75	R76 - 100	R101 - 150	R151 - 200	Company Pays
> R201				

38 Do you connect your personal computer to the Internet via your cellular telephone?

Yes	No

39 Do you surf the Internet from your cellular telephone ?

Yes	No

40 Would you surf the Internet from your cellular telephone ?

Yes	No

42 If "no", which are some the reasons why ?

Too expensive	Not aware of service	Other
Phone not compatible	No need for this service	Not Feasible
Would surf via Telkom		

Section H : Your Needs for the future !

43 What would you like from your network provider ?

a. More free minutes

Yes	No

b. Better free telephones on packages

Yes	No

c. Tailored packages for students with cheaper subscriptions

Yes	No

d. Short Message Services (SMS) > 160 characters

Yes	No

e. Cheaper SMS prices

Yes	No

f. Cheaper Call Rates for students

Yes	No