

**UNIVERSITY OF KWAZULU-NATAL**

**The Usage Pattern of Nutritional Supplements amongst University of KwaZulu-Natal Master of Business Administration (MBA) Students.**

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**A dissertation submitted in partial fulfillment of the requirements for the degree of  
Master of Business Administration**

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Graduate School of Business and Leadership**

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## **Abstract**

Nutritional supplements are a combination of complementary medicines and functional foods. While research suggests that the usage of nutritional supplements is increasing worldwide, the growth of the industry is being hampered by a lack of understanding on the part of consumers. The main aim of this study was to determine the usage pattern of nutritional supplements amongst University of KwaZulu-Natal (UKZN), Masters of Business Administration (MBA) students registered in 2011. Research data for this study was obtained by surveying UKZN MBA students. From a population of 250, a probability sample of 152 responses was statistically analysed for the research. Quantitative data obtained from a questionnaire was used and analysed to meet the study's objectives. A salient finding of the study was that there is an "untapped" market amongst Black consumers that the nutritional supplement businesses should target. The study revealed that the majority of the respondents did not fully understand the benefits of nutritional supplements.

The overall results of the study revealed the usage patterns of nutritional supplements amongst UKZN MBA students. The results also identified which population group and which gender consumed nutritional supplements. This study could assist nutritional supplement businesses to gain market share. The results can be used to formulate marketing strategies and to provide businesses with a competitive advantage. The recommendations of the study were that growth in the nutritional supplement industry could be achieved by targeting the Black market and that additional marketing campaigns were needed to educate and inform consumers about the benefits of nutritional supplements.

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# CHAPTER ONE

## INTRODUCTION

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### 1.1 Introduction

Nutritional supplements are a diverse product category with various synonyms used internationally. In 1989, Stephen Defelice derived the term “nutraceutical” from “nutrition” and “pharmaceutical” (Ekta and Kalra, 2003). Researchers of nutritional supplements and pharmaceutical companies use this term.

The purpose of this study was to research, analyse and discuss the usage patterns of nutritional supplements amongst University of Kwa-Zulu Natal, Master of Business Administration (UKZN MBA) students. The research provided an analytical understanding of the relationship between the consumer, products and consumption patterns. This research would assist business in gaining a competitive strategic advantage in the nutritional supplement industry.

This chapter sets the foundations for this research and outlines the importance of the study.

### 1.2 Problem Statement

Since 1995, the nutritional supplements industry has grown significantly (World Trends of Nutraceutical, 2010). However, growth has slowed down since 2008 and organisations are facing new challenges in attracting consumers. There are more local and international brands entering the nutraceutical market. Market presences becomes crucial to gain and keep market share. There is limited information on the profile of nutritional supplements consumers and their consumption patterns are also not clearly understood (World Trends of Nutraceutical, 2010).

The objective of the research was to study the usage patterns of nutritional supplements amongst UKZN MBA students and to determine the type of nutritional supplements they were consuming. Little is known about the usage patterns of nutritional supplements and the research was designed to find out more. The study will attempt to provide an understanding of

the relationship between the consumer and product selection.

The study aimed to solve the following research question: What are the usage patterns of nutritional supplements amongst UKZN MBA students? In order to answer this research question, five objectives were proposed.

### **1.3 Objectives**

The research study's five objectives included:

1. Do demographics influence the use of nutritional supplements?
2. Do consumers know what nutraceuticals are?
3. What are the consumption patterns of nutritional supplement users?
4. Which nutritional supplement brands and products are used?
5. Why non-users choose not to use nutritional supplements?

### **1.4 Motivation for the Study**

There are five stakeholder groups that would benefit from this study. These stakeholders are consumers, the retail sector, manufacturers, suppliers and research centres. The retail sector provides the platform for the consumers to have direct access to the products. Consumers create a demand for nutritional supplements. Consumers need to be better informed of the benefits of consuming nutritional supplements, and what products they need in order to improve and enhance their lifestyle.

Suppliers must provide in-house research and development to update and develop new formulas and keep up with international trends. Suppliers need to work closely with researchers and developers such as universities and research centers like the Centre for Innovation and Research (CSIR) in order to keep abreast with the latest nutritional supplement trends. Suppliers provide the unique materials that can be used to market the products. The manufacturing sector needs to update their manufacturing methods to produce the right types of nutritional supplements, based on global consumer consumption patterns.

The motivation and background for the study was to research the usage patterns of nutritional supplements amongst a specific sample of consumers, namely UKZN MBA students, as there was limited information on usage patterns in literature.

### **1.5 Focus and significance of the Study**

The focus and significance of this study was to understand the following:

1. Consumer knowledge of nutritional supplements.
2. To understand the buying patterns of nutritional supplement.
3. To establish why non users do not consume nutritional supplements.
4. To understand Brand awareness.
5. Marketing ability to inform consumers about nutritional supplement benefits.

Musclescience, the researcher's employer, does not manufacture products in all nutritional supplement categories as they do not have accurate data on the consumer needs. This study, although very narrow, will give them an idea of the trends which could lead to a larger study. The study only targeted UKZN MBA students. The age of the respondents ranged between 25 and 59 years. Even though 16-24 year olds are a lucrative market segment, they were not considered for this study. MBA students have to be 25 years and over to be accepted into the MBA program. A larger sample size would have increased the accuracy of the study. Samples from outside the UKZN MBA group would have provided additional data. The population that was surveyed was not done across all levels of society.

### **1.6 Proposed Methodology**

A literature review was conducted by using online literature, journals, books and relevant magazine articles. A quantitative approach was used for the research study. The data collected was displayed on bar charts, histograms and pie charts. These assisted the researcher in summarising the data in a meaningful way. Patterns and trends emerged from the data. Cross

tabulation was used to determine the relationship between relevant variables.

A simple random sampling technique was selected. The research tool used to collect the data was a questionnaire which was emailed to respondents and was answered online. The researcher used QuestionPro which is an online survey program. Data was analysed electronically by means of the Statistical Package for Social Science (SPSS, version 18). A detailed methodology is contained in chapter three.

## **1.7 Chapter Outline**

The structure of the study was broken down into the following six chapters:

Chapter One: This presents the overview of the study relating to the consumption of nutritional supplements amongst UKZN MBA students. The chapter outlines the problem statement, research, motivation and the objectives of the study.

Chapter Two: The literature review provides the theoretical background of the study to outline the growth of nutraceutical industry and provide an understanding of nutraceuticals, market segmentation, distribution channels and consumer behaviour.

Chapter Three: This outlines the research methodology and various data collection techniques used in the study.

Chapter Four: This chapter presents the results in the form of descriptive and inferential statistics.

Chapter Five: This chapter discusses the results obtained from the study and links the results to the study's objectives.

Chapter Six: This chapter provides recommendations and conclusions on how a business in the nutritional supplements industry can gain market share by understanding the usage patterns of consumers.

## **1.8 Summary**

The chapter outlined the reason for the research, the process and justification for this study which will establish the relationship between the consumer, products and consumption. Growth in the nutritional supplements industry is dependent on consumer usage patterns, consumer knowledge and the consumers understanding of nutritional supplements. Five objectives were set in order to understand nutritional supplements consumption patterns amongst UKZN MBA students. An understanding of consumption patterns is essential in order to grow the nutritional supplement industry. This study will take a quantitative approach. The next chapter presents a literature review on the background of the nutritional supplement industry and consumer behaviour.



## **CHAPTER TWO**

### **THE RISE OF THE NUTRITIONAL SUPPLEMENT INDUSTRY**

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#### **2.1 Introduction**

The purpose of this literature review is to provide a background to the nutritional supplement industry. Nutritional supplements are a diverse product category with various synonyms used internationally. The literature review will provide definitions used in this field. The nutritional supplement industry is entering into the complementary medicine segment, an area that is sharply defined and quantifiable.

The literature survey will provide an understanding of the relationship between the consumer and product selection. The review will discuss supplement segmentation, supplement knowledge, trends, knowledge distribution channels, the Consumer Protection Act 68 of 2008, labelling claims and consumer behaviour in the nutritional supplement industry.

#### **2.2 Definitions of Nutraceutical**

The former chairman of the Foundation for Innovation in Medicine, Stephen Defelice coined the term “nutraceutical”. A nutraceutical is any substance that is food, or part of a food, and that provides medical or health benefits, including the prevention and treatment of disease. Nutrition is an important concern for the modern day consumer. Although exercise through training programmes is considered to increase nutrient needs, a well-balanced diet with adequate calories could provide the necessary nutrients (Maugham, King and Lea, 2004).

According to Palthur and Chitta (2010), functional foods are food products that are enriched with substances known, or assumed to be associated, with health benefits. There are no legal health claims that can be made by functional foods. The industry uses marketing to inform consumers of their benefits. This creates consumer expectations of some type of physiological action relating to therapeutic or preventative value of the product (Palthur and Chitta, 2010).

Ernst (2010) suggested that complementary medicines are products that are used to maintain health and for the treatment of minor, self-limiting conditions. Torry (2008) suggested that Complementary/Alternative Medicine (CAM) is an umbrella term for a collection of different

approaches to diagnosis and treatment. Nutritional supplements can be categorised as:

1. Products which act as a health preventative measure.
2. Products that have a researched bioactive compound to provide a health benefit.
3. Products that have been formulated to deliver a desired functional health benefit (Torry, 2008).

According to Zeisel (1999), certain foods or food ingredients provide nutrients that aid in nourishing the body and keeping the system in a healthy condition. The term nutraceutical has been adopted by the nutritional supplement industry to describe any food product or supplement that may have a functional or physiological effect that may be beneficial to the consumer (EU Regulation of Nutraceutical, 2008-2011). This includes vitamin supplement capsules, muscle gain supplements, weight-loss and fat burners, endurance and recovery remedies, meal replacements and foods which claim to have a physiological effect (Zeisel, 1999).

Categories of nutritional supplements include:

1. Vitamin supplements, which are any vitamins or provitamins consumed in addition to nutrients in the food eaten.
2. Muscle-gain products that assist the consumer to gain muscle mass and weight. Although the body naturally develops muscle, in order to build muscle proper protein supplementation is required, as protein is the building block of muscle (Ruggiero, 2008).
3. Weight loss and fat burners that are used as diet pills or weight loss supplements to increase the body's metabolic rate thereby increasing the amount of calories burnt.
4. Endurance products that enable a muscle, or group of muscles, to sustain repeated contractions against a resistance for an extended period of time.

5. Meal replacement products that are defined as “formulated food” that can replace one or more daily meals. When adapting to a healthy lifestyle, adequate nutrition for weight-loss is imperative. Experts recommend that one consume five to six small meals daily, along with exercise to burn fat. Meal replacement products have been scientifically proven to aid in the weight loss process. Meal replacements are marketed as diet meals to substitute for a balanced meal (O’gilvie, 2010).

### **2.3 Nutritional Supplement Segmentation**

Kotler and Keller (2009) suggest that market segmentation consists of a group of customers who share a similar set of needs and wants. Instead of creating segmentation, a business needs to identify and focus on what segment needs to be targeted. Cross (2000) suggests that market segmentation is an important concept because it is believed that organisations that segment their market achieve higher sales than those using a mass market approach. Market segmentation divides a large mass market into distinct consumer subsets of similar needs and characteristics. This influences consumption patterns because consumer this will provide insight to what drives the consumer to purchase nutritional supplements. The nutritional supplement industry is a dynamic, evolving industry that offers exciting opportunities, given the growing consumer interest in health enhancing foods (Cross, 2000).

According to Palthur and Chitta (2010), market segmentation is an important concept for the new emerging nutraceutical industry to understand. It is important that consumers be provided with accurate, non-misleading information about the health benefits of nutritional supplements. It is also very important that claims are supported with accredited formulations and ingredients. These claims can impact on the promotion and distribution of products to the consumer (Palthur and Chitta, 2010).

Hague and Harrison (2010) suggested a number of ways to identify market segments. The most common approaches are:

1. Demographic segmentation that considers age, gender, income, occupation, education, race, nationality, religion and family size.
2. Geographic segmentation that divides the market based on market location.

3. Psychographic segmentation that dissects the market by social class, lifestyle descriptors and personality traits.
4. User benefits that classify segments in terms of what consumers deem most important about the product i.e. service, quality, price and delivery.
5. Product usage that defines segments as regular users, potential users, non-users and first time users.

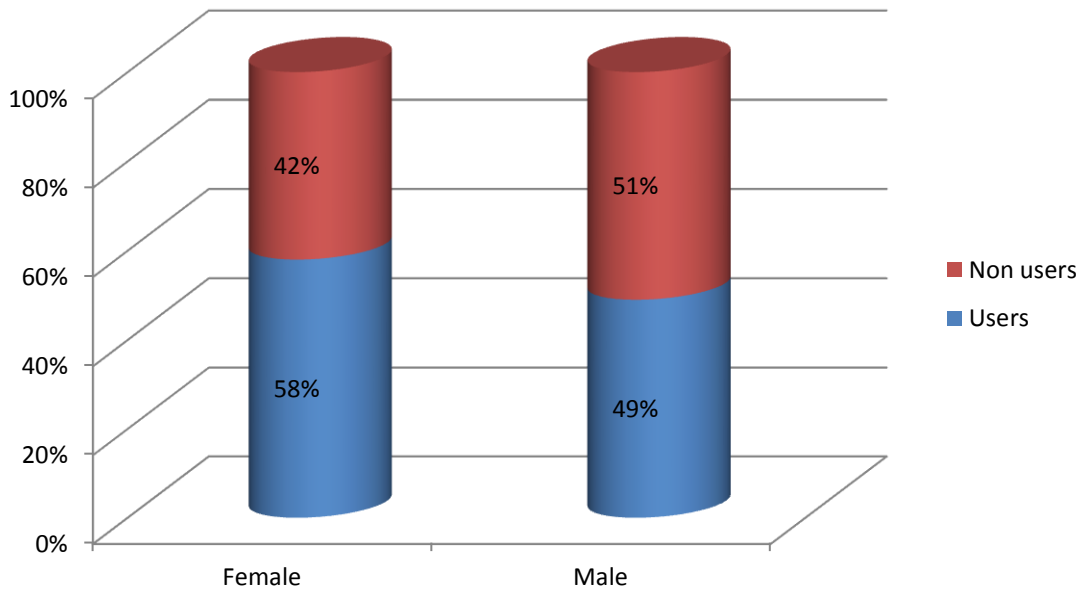
According to Kotler and Keller (2009), an organisation must evaluate the various segments, and then decide whether to target one or several segments with a specific product, or a specific market, or the full market. The nutritional supplement industry needs to identify which market segment or segments their products will target.

Cross (2000) suggests that once a segment or segments have been identified, marketers need to evaluate their viability. This can be done through a set of questions or criteria that include:

1. Who is the market, how big is the market and how profitable is the market?
2. Is the market big enough to be profitable?
3. The market must be accessible through effective communication methods.
4. The segment must be willing and able to purchase the product. How responsive will the segment be to the product?
5. The segment must be relatively stable (Cross, 2000).

The nutritional supplement industry has several product categories. This includes herbal, dietary and pharmaceutical supplements. The marketer needs to identify and classify their products within these categories.

The study by Analytix Business Intelligence (2010), illustrated in Figure 2.1, compares South African male and female nutritional supplement users and non-users.



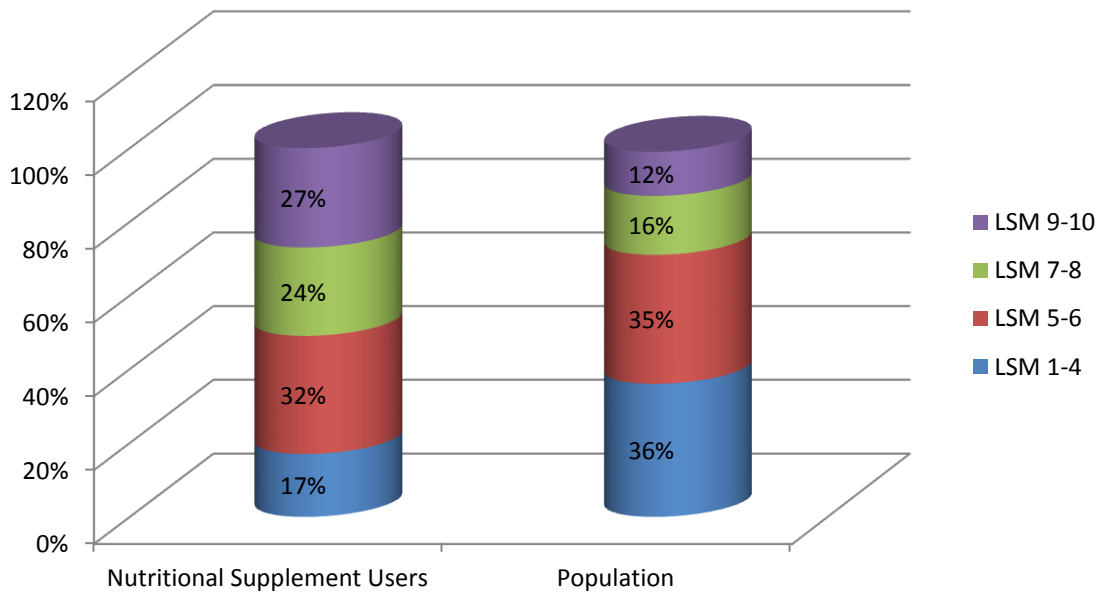
**Figure 2.1 Gender profiles of vitamin and supplement users and non users**

Adapted from Consumers of Vitamins and Supplements. 2009. [Online]. Available at [WWW:www.analytixbi.com](http://WWW:www.analytixbi.com) (Accessed on 10 January 2011).

Figure 2.1 illustrates that 58% of the female respondents used nutritional supplements compared with 49% of male respondents (Consumers of Vitamins and Supplement, 2009). There are more male non-users than female non-users. This indicates that there is potential for more growth in the male non-user market than there is in the female non-user market.

The Living Standard Measure (LSM) should also be considered when analysing buying patterns by gender. The LSM measures the financial health of a population in general terms, by assessing the quantity of the consumption of members of that population. The measure most frequently used to estimate standard of living is Gross National Income per capita (Living Standards Measures, 2006).

Figure 2.2 illustrates the users of vitamins and supplements with regards to the Living Standard Measure in relation to the South African population.



**Figure 2.2 LSM profiles of nutritional supplement users and population**

Adapted from Consumers of Vitamins and Supplements. 2009. [Online]. Available at WWW:www.analytixbi.com (Accessed on 10 January 2011).

Figure 2.2 illustrates that LSM 9-10 comprised 12% of the population, however, this group made up 27% of the vitamin and supplement users. LSM 1-4 comprises 36% of the population, which represented 17% of those that use vitamins and supplements. This indicates that there is opportunity and potential growth in the entry-level market.

The data provided in Table 2.1 illustrates that young athletes have shown similar preferences in terms of the types of nutritional supplements used.

Author, Year	Sample size	Age	Prevalence	3 most common supplements (%)
Sobal and Marquart 1994	742	High school student	38%	Vitamin C (25) Multivitamins (19) Iron (11)
Kim and Keen ,1999	1355	16-19	35.8%	Vitamin C (41.2) Multivitamins (27) Calcium (10.7)
O'Dea ,2003	78	11-18	na	Sports Drinks (56.4) Vitamins/minerals (48.7) Energy drinks (42.3)
Ziegler et al, 2003	105	16	71%	Multivitamin( M- 61, F-83) Herbals (M-44,F-48) Multivitamin only (F42) Protein bars (M-38)
Bell et al, 2004	333	13-19	na	Multivitamin/mineral (42.5) Protein (13.5) Energizers (6)
Nieper, 2005	32	18	62%	Vitamin C (35) Multivitamins (45) Iron (30)
Scofield and Unruh, 2006	139	14-19	22.3%	Meal Replacement protein (23.7) Vitamin – minerals (19.4) Creatine (16)

**Table 2.1 Dietary supplements used by young athletes**

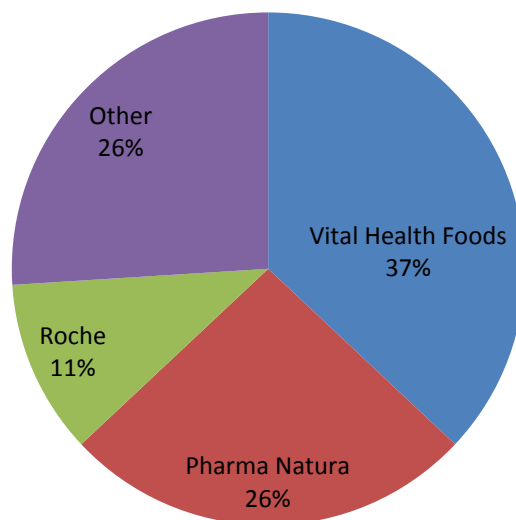
Adapted from Mcdowall, J.A. 2007. Supplement use by young athletes. *Journal of Sports Science and Medicine*, vol. 6, pp. 337-342. Elsevier, UK.

Table 2.1 indicates the use of nutritional supplements amongst various young people. It is evident from these studies that the majority of young athletes took multivitamins.

## 2.4 Industry Analysis of Nutritional Supplements

The demand for health products in South Africa has grown in recent years. This is due to increased health awareness, successful marketing on the part of the major industry players and the growth of the health and fitness industry. Health care products, including vitamins and dietary supplements, are purchased mainly by consumers with larger disposable incomes, as well as those who want to live a healthy lifestyle (South African market...2007).

The South African nutritional supplement industry is dominated by three local suppliers. Figure 2.3 shows the ranking, in terms of market share, for the major nutritional supplement suppliers in South Africa.



**Figure 2.3 Ranking of key South African nutritional supplement companies**

Adapted from South African market for natural health supplements, 2007. [Online]. Available WWW: <http://www4.agr.gc.ca> (Accessed 29 January 2011).

Figure 2.3 shows the ranking, in terms of market share, for the nutritional supplement suppliers. Vital Health Foods is the market leader at 37%, followed by Pharma Natura (26%), Roche (11%) and other companies at 26%.



Organisations entering into the nutritional supplement market must consider more than one product specification. They need to take into account variables such as regional and global market trends, consumer needs, distribution, and barriers to entry, legislation, competition, changing trends, innovations, current products vs. new products and product competency (South African market...2007).

Based on the above information, organisations can decide whether to introduce a new food supplement product. According to Kotler and Keller (2009), organisations need to understand which market they want to introduce the product to. The new development should be in line with their strategy. The organisation should also consider the company's success and the need to sustain growth. It is also important to find ways to ensure sustainability and maximise organisational profits (Kotler and Keller, 2009).

## **2.5 Nutritional Supplement Distribution Channels**

Organisations that want to enter into the nutritional supplement market can use various distribution channels. Nutritional supplements are promoted through TV and other media. Personal endorsements by public or famous people are also a popular medium to advertise products.

There are various types of distribution channels that organisations can use to reach consumers. These include:

1. Pharmacies
2. Health Care Centres
3. Health Shops
4. Food Retail Chains
5. Trade Events
6. The Internet
7. Social Networks

Martins (2005) suggest that organisations must identify the correct distribution channel in order to reach the correct target market. This will influence the usage patterns of nutritional supplements. Consumers' knowledge of nutritional supplements will influence from which

distribution channel they purchase the product (Martins, 2005).

## 2.6 Nutritional Supplement Trends

According to World Trends of Nutraceuticals (2010), the demand for nutritional supplements increased by 5.8 % to \$15.5 billion, in 2010. Due to their broad applications and strong clinical evidence of health benefits and safety, the best growth opportunities are in functional foods and beverage foods (World Trends of Nutraceutical, 2010).

According to Kalra (2003), China and India have emerged as the fastest expanding nutritional supplement markets as strong economic growth allows them to upgrade and diversify food, beverage and drug production capabilities. The United States remains the largest global consumer of nutritional supplement ingredients due to the increasing range of nutritional preparations and natural medicines produced domestically. However, due to outsourcing trends, the United States has relinquished its longstanding top position in the global production of nutritional supplement ingredients to China. Soy proteins and isoflavones, omega-3 fatty acids, probiotics, lycopene, calcium and magnesium are witnessing the fastest growth. This is due to their widely accepted health benefits and expanding applications in meal supplements and functional foods and beverages (World Trends of Nutraceutical, 2010).

Table 2.2 shows the world growth trends between North and South America, Western Europe and Asia.

World Nutraceutical demand (million dollars)					
	Year			% Period Growth	
	2000	2005	2010	2000/2005	2005/2010
World Nutraceutical Demand	8770	11680	15500	5.9%	5.8%
North America	2285	2920	3700	5.0%	4.8%
Western Europe	2420	2950	3530	4.0%	3.7%
Asia Pacific	2770	4010	5800	7.7%	7.7%
Other	1295	1800	2470	6.8%	6.5%

**Table 2.2 World Nutraceutical demand (million dollars)**

Adapted from World Trends of Nutraceutical. 2006. [Online]. Available WWW: [http://www.helpguide.org/life/supplements\\_dietary\\_nutritional\\_herbal.htm](http://www.helpguide.org/life/supplements_dietary_nutritional_herbal.htm) (Accessed 24 January 2011).

Table 2.2 illustrates that the world demand for nutritional supplements is in marginal decline (0.1%) when comparing 2000/2005 versus 2005/2010. Asia Pacific demand remains constant with a growth of 7.7%. There is a 0.2% decline in North America, and a 0.3% decline in Western Europe. Other countries record a decline of 0.3%.

The demand for health products in South Africa has grown in recent years due to the following reasons:

1. Increased health awareness by consumers
2. Growth of health and fitness centers
3. Successful marketing by major suppliers

South African consumers are interested in living healthier lifestyles, and improving their understanding of nutrition and preventative self-medication. Nutritional supplements have become more affordable to consumers in recent years as an expanding middle class has resulted in rising income levels (South African market... 2007). However, South Africa was not represented in the world rankings of the fastest growing market for nutritional supplements in emerging countries as illustrated in Table 2.3.

Ranking	Country
1	Serbia and Montenegro
2	Venezuela
3	Belarus
4	Turkey
5	Romania
6	Uzbekistan
7	Argentina
8	Indonesia
9	Russia
10	Lithuania
11	Ukraine
12	Iran
13	Nigeria
14	Philippines

**Table 2.3 Nutritional supplement ranking in emerging countries**

Adapted from South African market for Natural Health Supplements. 2007. [Online]. Available WWW: <http://www4.agr.gc.ca> (Accessed 29 January 2011).

Table 2.3 indicates that the only African country ranked amongst the top 14 emerging markets is Nigeria, placed at 13<sup>th</sup> position (South African market..., 2007). Nigeria's population was estimated to be 156 million in 2011. Nutritional supplement suppliers should consider marketing their products throughout Africa.

Table 2.4 illustrates the percentage breakdown of the global market for nutritional supplements.

<b>Region</b>	<b>Percentage</b>
Asia Pacific	45%
North America	34%
Western Europe	14%
Latin America	3%
Eastern Europe	2%
Australasia	1%
Africa and Middle East	1%

**Table 2.4 Global market for nutritional supplements**

Adapted from South African market for Natural Health Supplements, 2007. [Online]. Available WWW: <http://www4.agr.gc.ca> (Accessed 29 January 2011).

The data in Table 2.4 shows that Asia Pacific, (45%), consumed the greatest quantity of nutritional supplements. This is followed by North America (34%), Western Europe (14%), Latin America (3%), Eastern Europe (2%), Australasia (1%) and Africa and Middle East (1%).

In 2005, the nutritional supplement turnover in South Africa was valued at R534 million. This represents a growth of 9% from 2004 suggesting that there are an increasing number of consumers entering the nutritional supplement market. It was predicted that there would be annual growth of 7% from 2006 until 2010. However, increasing regulatory scrutiny of immune health ingredient claims may hamper this growth. Regulators have looked into the quality and quantity of human clinical research and in particular, more attention is being paid to whether the research was conducted using the specific ingredient for which the claim is made (South Africa market...2007).

2010 was a good year for weight management and sports nutrition products (Wright, 2010) as

sales grew significantly. Good Manufacturing Practices (GMP) brought a new level of quality and accountability to the nutritional supplements industry where it was needed. The nutritional supplement industry is a dynamic, evolving industry that offers exciting opportunities to merge scientific discovery with growing consumer interest in health enhancing foods. Nutritional supplements will continue to have great appeal.

However, the greatest challenge remains in the public policy and regulatory sector. This will be monitoring the claims that products make on their labels, which may mislead the consumer. This will also impact the way an organisation can promote and distribute products to the end user (Wright, 2010).

### **2.6.1 The South African Consumer Protection Act**

According to Melville (2010), most South African businesses remain unfamiliar with the new Consumer Protection Act (CPA) that came into effect on 31 March 2011. In terms of Section 61 of the Act, a producer, importer, distributor or retailer of goods is liable to a consumer on a no-fault basis for harm, including death, injury, and physical damage or associated economic loss, caused by unsafe or defective goods (Melville, 2010).

Melville (2010) states that the Act will have a significant impact on the way business is conducted in South Africa. All suppliers are covered by the Act, which will apply to virtually every business transaction. Under the Act, the consumer will be able to sue suppliers and manufactures of products for any damages or injuries suffered as a result of using the goods or product. It is very important that warnings are highlighted on the labels of nutritional supplements, advising the consumer to seek medical advice from a health care professional person, if the consumers have any pre-existing medical conditions.

### **2.6.2 Packaging and Labelling Claims**

The South African Medicine Control Council (MCC) is restructuring their system to prevent substandard or illegal products from entering the market. Organisations no longer get a MCC registration number immediately that they lodge an application for a new product, which will enable them to launch a new product. These applications are now scrutinised before an MBR.20 certificate is issued. Complementary medicines cannot enter the South African market without this MBR.20 document. Organisations need to substantiate the claims on their

labels with scientific evidence or clinical trials. Together with the Consumer Protection Act the retailer, supplier, manufacturer and importer are liable for the products they offer to the consumer.

According to Wallace (2010), the Food and Drug Administration (FDA) in the USA is a federal agency in the Department of Health and Human Services established to regulate the release of new foods and health-related products. The FDA has warned that it would consider using its regulatory tools “if voluntary action by the food industry did not result in a common, credible approach” to front-of-pack and on-shelf labelling. The FDA is also researching ways in which the Nutrition Facts panel could be revised to make it more helpful to consumers (Wallace, 2010).

South Africa labelling legislation (R146/2010) was gazetted by Government in March 2010 (Department of Health, 2012). The industry was given a two year implementation period during which suppliers and importers were required to comply with the labelling act (R146/2010). The risk for nutraceutical businesses was that an Environmental Health Perspectives (EHP) identifies the non-compliance. The inspector then contacts the supplier in writing and instructs the supplier to withdraw the product from the market. This legislation requires all retailers to be vigilant. Labelling of nutritional supplements must comply with the new labelling act. A competitor or a consumer could also initiate non-compliance (Melville, 2010).

## **2.7 Consumer Behaviour**

According to Schiffman and Kanuk (2009), consumer behaviour can be described as the behaviour that consumers display for purchasing, evaluating and searching for a service or product. Consumer behaviour studies examine how consumers make decisions to spend their available disposable income. This includes what product they will buy, why they buy it, how they buy it and how often they will buy it. Organisations need to understand what outside influences affect consumers’ product selection so that they can design a marketing strategy that will favourably influence consumer decisions. Consumer buying behaviour refers to the buying behaviour of the ultimate consumer (Schiffman and Kanuk, 2009).

Lingham (2009) suggested that the marketing concept stresses that a firm should create a

marketing mix that satisfies the consumer; therefore they need to analyse what, where, when and how consumers buy. Marketers can then better predict how consumers will respond to marketing strategies (Lingham, 2009).

Perner (2010) states that there are four types of consumer buying behaviour:

1. Routine Response/Programmed Behaviour. This buying involves low frequency purchases and low cost items. This needs very little search and decision effort and purchases are almost automatic. These include soft drinks, ready to drink (RTD), gels, and snack foods.
2. Limited Decision Making. This is when consumers buy products occasionally. This behaviour is used when one needs to obtain information about unfamiliar brands in a familiar product category. This requires a moderate amount of time for information gathering. Examples include clothes, household appliances, and a new nutritional supplement entering the market, or a new consumer wanting to purchase nutritional supplements.
3. Extensive Decision Making/Complex. This requires a high degree of involvement, and relates to unfamiliar, expensive and/or infrequently bought products. This requires a high degree of economic/performance/psychological risk. Examples include cars, homes, computers, and education. A consumer can spend a lot of time seeking information and deciding on what to purchase. The consumer goes through all six stages of the buying process.
4. Impulse buying, no conscious planning. This is where there is no risk or low risk involvement (Perner, 2010).

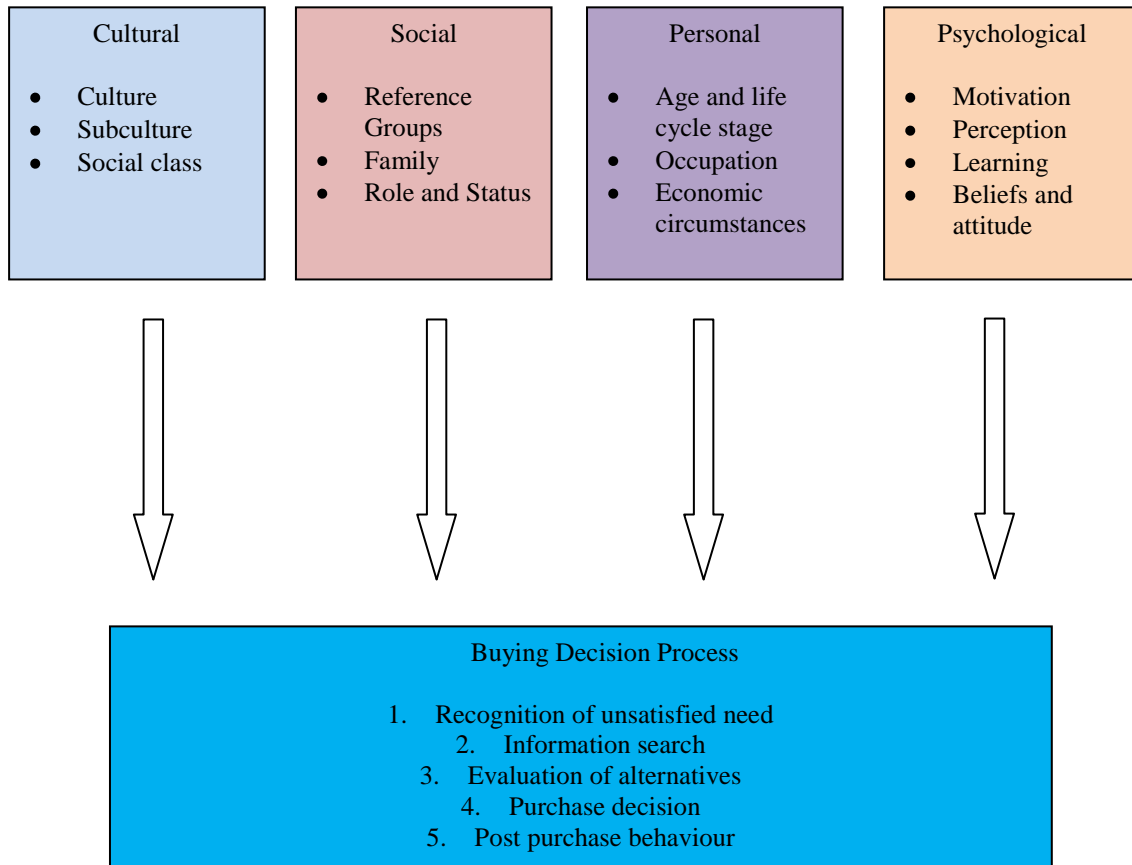
Nutritional supplements fall into either the routine response or limited decision making behaviour (Perner, 2010). The decision to purchase depends on the consumer's knowledge of nutritional supplements and who is influencing the purchase.

Marketing is the medium that connects the nutritional supplements product with the consumers. It includes all the processes for creating, communicating and delivering value to the consumer in a way that benefits the company. It is about understanding every facet of consumer behaviour in order to develop a marketing mix that will meet the consumer's needs



(What is consumer..., 2009).

Figure 2.4 illustrates four major factors that influence the buyer's behaviour. All these factors have a direct influence on the consumer's buying decision process.



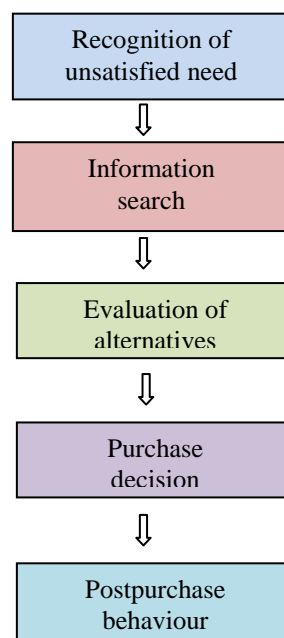
**Figure 2.4 Cultural and Social-group influences on consumers buying behaviour.** Adapted from Kotler and Keller, 2009. *Marketing Management*. 13<sup>th</sup> ed. Pearson Education Inc., New Jersey, USA.

In Figure 2.4 the four major factors that influence buyer's behaviour include cultural, social, personal and psychological. Kotler and Keller (2009) suggest that cultural factors exert the broadest and deepest influence on consumer behaviour as consumer's values, perception and preference are set. Since cultures make up the market segmentation, products can target these markets. Consumers are influenced by social groups which determine the usage pattern of products. Personal factors ultimately affect what product a consumer uses. Consumer buying choices are also influenced by motivation, perception, learning, beliefs and attitudes (Kotler

and Keller, 2009). Consumers who perceive themselves as overweight may seek weight loss capsules, fat blocker and thermogenic tablets to help them lose weight. However religion which is a subset of culture, may impact on the purchase of some products which contain ingredients from an animal source that is prohibited to them. In addition vegans will not purchase products which contain ingredients that are derived from animal. Social factors also influence buying behaviour such as family beliefs. Parents may be against purchasing and consuming nutritional supplements. Personal factors may also impact the purchasing of nutritional supplement due to economic circumstances.

### 2.7.1 The 5 Stage Model - Buying Decision Process

Figure 2.5 indicates the five stages that are involved in the buying decision process. Organisations need to understand how consumers make their buying decision. Schiffman and Kanuk (2009) suggested that buying decisions start a long time before the purchase is made and that there are consequences long after the purchase.



**Figure 2.5 The 5 Stage Model - Buying Decision Process**

Adapted from Schiffman and Kanuk (2009). *Consumer Behaviour*. 10th ed. Prentice-Hall, New Jersey, USA.

According to Schiffman and Kanuk (2009), the 5 Stage Model includes recognition of unsatisfied need, information search, evaluation of alternatives, purchase decision and postpurchase behaviour. The buying decision process can be described as follows:

1. Recognition of unsatisfied need

This process starts with the consumer recognising a need to consume the nutritional supplements. As nutritional supplements are a luxury item the organisation needs to increase consumer motivation in order to purchase these items. These motivational needs could be influenced by wanting a healthy life style and being influenced by advertisements or friends (Yoon, Cole and Lee, 2009).

2. Information search

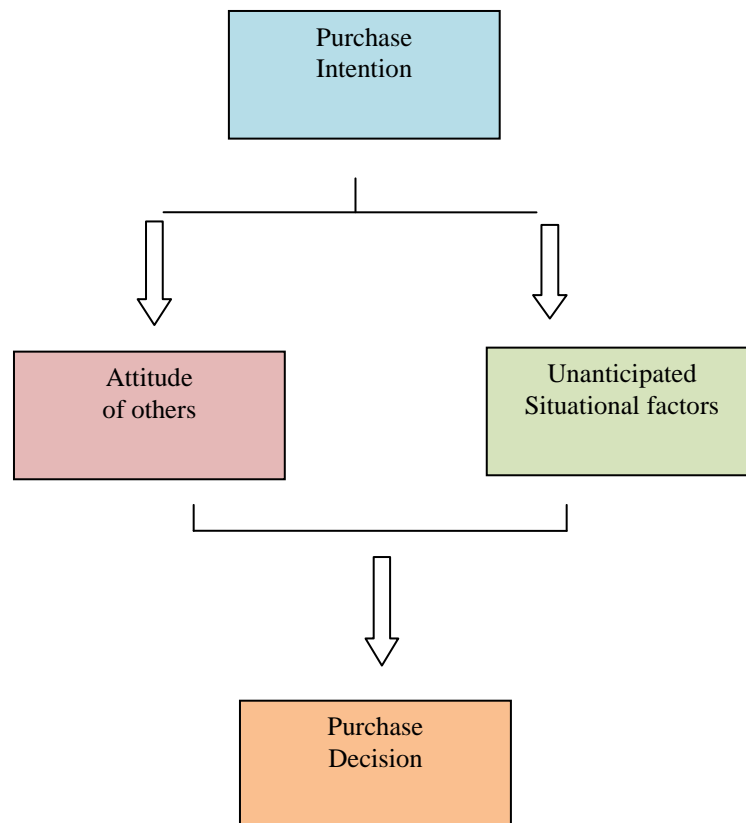
This information about a product is derived from four groups namely personal, commercial, public and experiential. Each information source performs a different function in influencing the buying decision (Schiffman and Kanuk, 2009). The study will highlight which media influences consumer's usage patterns of nutritional supplements.

3. Evaluation of alternatives

The evaluation of alternatives can be broken down into three processes. The first being the need to satisfy, secondly certain benefits need to be fulfilled and thirdly the product must have certain benefits to satisfy their need. The consumer would look at value for money or would be looking for a reputable brand or would be influenced by certain ingredients in the product. This is where market segmentation is critical to align the product with the correct market. Matthies (2005) suggests that consumers are influenced by their experience, learning and age. These variables will influence their buying behaviour.

4. Purchase decision

This is the stage where the consumer is intending to make a purchase. The consumer has decided on the brand, the quantity, when to make the purchase and what method of payment.



**Figure 2.6 Intervening factors affecting purchase decisions**

Adapted from Schiffman, L. and Kanuk, L. 2009. *Consumer Behaviour*. 10<sup>th</sup> ed. Prentice-Hall, New Jersey, USA.

Figure 2.6 illustrates the intervening factors that could influence the purchase decision. These are the attitude of others and unanticipated situational factors. Marketers must understand the factors that provoke a feeling of risk and provide information to reduce the perceived risk (Schiffman and Kanuk, 2009). Due to the lack of understanding of the benefits of nutritional supplements, the consumer may be influenced in their purchasing decision. The consumer can be influenced by the attitude of others and/or unanticipated situational factors such as emotion and the availability of product when purchasing nutritional supplements.

## 5. Postpurchase Behaviour

Once the product has been purchased the consumer may suffer from ‘buyer remorse’ due to expectations not being met. The larger the gap between expectation and performance, the greater the dissatisfaction. This will influence the repeat purchase or a return of product. Organisations have developed Customer Return Management systems to build long term brand loyalty. The effectiveness of these CRM systems are influenced by the response time in satisfying the consumer’s complaint (Schiffman and Kanuk, 2009).

## 2.8 Summary

The literature review showed that the nutritional supplement industry is a dynamic and evolving industry that offers exciting opportunities to merge scientific discovery with growing consumer interest. The Consumer Protection Act will have a significant impact on the way business is conducted in the nutritional supplements industry, as the producer, importer, distributor and retailer will now be held liable for false claims. Nutritional supplements can be categorised into different products such as vitamin supplements, muscle gain products, weight loss and fat burners, endurance and recovery, meal replacement and foods which claim to have a physiological effect.

The literature review also revealed that organisations need to understand what outside influences affect consumer product selection, so that they could design their marketing strategy to favourably influence consumer decisions. The demand for health products in South Africa has grown in recent years. This is attributable to increased health awareness, the successful activities of major market players and the growth of health and fitness centres. The next chapter discusses the research methodology used in the study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

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#### **3.1 Introduction**

This chapter discusses the research methodology and various data collection techniques used in the study. The work presents quantitative research methods that can be used when collecting data. The data collected for this study was used to determine the consumption of nutritional supplements amongst UKZN MBA students. Quantitative data was used to gain an understanding of consumers' knowledge of nutritional supplements and to understand consumer behavioural buying patterns.

#### **3.2 Aim and Objectives of the Study**

The aim of the study was to determine the usage patterns of nutritional supplements amongst UKZN MBA students and to understand their buying patterns. The study sought to examine the following research objectives:

1. To determine whether demographics influences the use of nutritional supplements
2. To determine whether consumers know what nutraceuticals are
3. To determine the consumption patterns of nutritional supplement users
4. To determine what brands and products were consumed
5. To determine why non-users choose not to use nutritional supplements

#### **3.3 Participants and Location of Study**

Data was collected from MBA students from the Graduate School of Business (GSB), at the University of KwaZulu-Natal. The total number of students enrolled for the UKZN MBA in 2011 was 250. The MBA students were adults with a minimum of an undergraduate degree or NQF7 on the National Qualifications Framework.

### 3.4 Research Approach

Lind, Marchal and Wathen (2010) suggest that data collection strategies allow for systematic collection of data about people, objects and phenomena. This provides information about the environment in which the data occur. Data collection can be in the form of both quantitative and qualitative data. Qualitative information is usually obtained from objects, pictures and words. The outcome is not always clear and it can be subjective. Quantitative data includes numbers and allows for relationships between phenomena to be identified. Data needs to be collected and then analysed, which is usually done statistically (Lind *et al*, 2010).

According to Lind *et al* (2010), there are two basic sources of data. The first source is primary data, collected for a specific purpose and commonly referred to as a sample. The second source is secondary data, which is collected for one purpose and is then used for a different purpose. Data can be collected by means of the following techniques:

1. Available information or historical archive analysis that uses existing data.
2. Observations, which involve systematically recording, selecting and watching.
3. Interviews provide an understanding and insight into people's behaviour.
4. Focus Group Discussions (FGD) involve a group of 8-12 respondents. They are free to discuss topics under the guidance of a facilitator or reporter.
5. Case studies provide an intensive examination of one person, a small group or a company.
6. Projective techniques involve a respondent who is required to react to some kind of visual or verbal stimulus.
7. Mapping and scaling is a useful technique for visually displaying relationships and resources.
8. Questionnaires are an accepted data collection tool. These can be administered through email, hand delivering questionnaires or gathering of data by getting all the respondents in one place (Lind *et al*, 2010).

Quantitative research was selected for the present study as the questionnaires produced numerical data that needed for statistical analysis. Data from the questions was collected in the form of numbers and statistics. All the aspects of the research study were carefully designed for

data collection. The study required precise measurement and analysis of target concepts that used questionnaires. Quantitative data is more efficient than qualitative data because statistics can provide probability and numerical data. The researcher using quantitative data tends to remain objective, separated from the subject matter (Rubin, 2007).

The quantitative data was collected by means of a questionnaire that was sent electronically to the participants. The closed question method was selected in which the researcher gave a set of alternatives for the respondents to answer. This allowed answers to be coded in order to analyse the data. The closed questions helped the respondents to make a quick decision. The closed questions also assisted the researcher to code the information in order to analyse the data (Sekaran and Bougie, 2010). This was a simple and straightforward method of data collection, but appropriate given the limited time that was available for conducting the study. Time constraints were overcome by making use of the Internet. The questionnaire included open-ended and structured questions. According to Baker (2003), this type of questionnaire needs to keep the respondents involved and interested.

Coldwell and Herbst (2004) suggest that there are advantages to using web-based surveys. The tools for conducting web-based surveys continue to grow in sophistication. By utilising new technology such as tablets and smart phones, researchers are able to gain access to a much larger group of participants (Coldwell and Herbst, 2004). Data obtained are generally easily compared and analysed, and yield a considerable degree of accuracy. However, an Internet survey could be considered biased due to sampled people not having access to, or choosing not to access the Internet. There are wide disparities in Internet access among ethnic and socioeconomic groups.

Besterfield (2009) suggest that for methodological and economic reasons, electronic surveys and observing consumer behaviour are attracting considerable interest. Collecting consumer data can be done directly as a consumer provides details, or indirectly by analysing consumer behaviour while on a website. Data on consumer behaviour can be accessed through tracking website logs, and the use of cookie software and web bugs (Besterfield, 2009).



### **3.5 Sampling**

According to Sekaran and Bougie (2010), a sample is a subset of the population. Some, but not all, of the elements of the population can be found in the sample. The sampling is used so that researcher can draw conclusions from an entire population. By studying the sample, the researcher is able to draw conclusions and make deductions that are generalisable to the relevant population.

There are two methods of collecting data. They include probability sampling and non-probability sampling. Probability sample includes unrestricted or restricted samples. The researcher used unrestricted samples, also known as simple random sampling. Simple random sampling is used when generalisability of the findings to the whole population, is the main objective of the study. There were 250 UKZN MBA students. This is known as the population size. A sample of 152 was used to answer the questionnaire based on a confidence level of 95% and margin error of 5% (The Research Advisors, 2006). A branch occurs when a choice is required, for example a question that has a “yes/no” response. Respondents who choose “yes” will “branch off” from those who choose “no”. The respondents will then answer probing questions related to their choice. The questions branched out at three questions which resulted in the n value changing. The study used simple random sampling because a sample of 152 was drawn from a population of 250 elements (Appendix 3). According to Sekaran and Bougie (2010), a sample size of thirty or more is sound. It is most likely that the distribution patterns of the characteristic in the population are also distributed in the subjects from the sample. Unrestricted or simple random sampling has the least bias and the most generalisability. Representativeness of the sample was critical for the study (Sekaran and Bougie, 2010).

### **3.6 Data Collection**

Kroenke and Auer (2007) suggest that data collection could be done manually or automatically. Business today is looking to automate input methods for increased efficiency, speed, data accuracy and security, lower cost and a decrease in non-responses. Manual data collection is still common and has its place in certain data collection practices. Data collection requires hardware that can cut across the methods of data collection (Kroenke and Auer, 2007). The data for this research was collected via the internet. A link to the questionnaire was initially emailed to the respondents. The respondents answered the questionnaire using a survey

package called QuestionPro. The data from QuestionPro was exported into Statistical Package for Social Sciences (SPSS version 18) which analyses quantitative data (Pallant, 2007).

### **3.7 Development of the Instrument**

According to Kothari (2006), research design involves a structured, systematic and scientific approach to obtaining new information about an event or occurrence. This involves making informed decisions based on qualitative and quantitative information. This will also provide consumers, producers and competitors with knowledge (Kothari, 2006). The researcher used quantitative data to extract the relevant information from the questionnaires. Two types of scaling methods were used in order to achieve the study's objectives. A nominal scale was used to extract demographic data and an ordinal scaling was used to rank preferences and the usages patterns of various products and brands.

Kumar, Aaker and Day (2001) suggest that questionnaires form the basis for the collection of data that will be analysed statistically. The most common instruments for gathering information for business research are administering interviews and conducting questionnaires. The process of developing the questionnaire is required to analyse consumer responses to the questions formulated to meet the objectives of the research study. Developing an effective questionnaire involves choosing questions that are focused on the needs of the study, in this case the objectives. In developing a questionnaire, it is important that the questions provide feedback. It is necessary to review the questionnaire before it is administered (Kumar *et al*, 2001).

According to Lind *et al* (2010), in constructing the questionnaire, it is important to consider the following:

1. What is the research study evaluating?
2. What particular aspects of the objectives required feedback?
3. Could this information be obtained from other sources?
4. Does the feedback from the questionnaire provide answers?
5. The number and type of questions are based around answering the objectives of the study. Lind *et al* (2010).

According to Kumar *et al* (2001), the designed questionnaire must not lead the respondent.

This must also not be ambiguous or require multiple answers from the respondent. The designed questions must be answerable with proper scaling. They should not involve socially undesirable and colloquial discrimination (Kumar *et al*, 2001).

The research objectives were linked to questions on a specifically designed questionnaire as follows:

Objective 1: Determine whether demographics influence the use of nutritional supplements:

- What is your gender?
- What is your age?
- What is your employment status?
- What is your race?

Objective 2: Determine whether consumers know what nutraceuticals are:

- Do you know what nutraceuticals are?
- What is your understanding of the term nutraceutical?

Objectives 3: Determine the consumption patterns of nutritional supplements:

- What nutritional supplements do you consume?
- How often do you consume the following nutritional supplements?
- How often do you buy your nutritional supplements?
- What has prompted you to consume nutritional supplements?
- Which is the main outlet where you buy your nutritional supplements?
- How much do you spend per month on nutritional supplements?

Objective 4: Determine what brands and products were consumed:

- Rank which of the following brands you are most familiar with?
- Do you buy Musclescience products?
- If you do buy Musclescience products, why do you choose their products?
- Which Musclescience products do you buy and how often?

Objective 5: Determine why non-users choose not to use nutritional supplements:

- Why do you not use nutritional supplements?

- Would you consider using nutritional supplements in the future?
- If you were to consider using nutritional supplements, what types would you consider as the most important?
- Rank what you would look for when selecting your nutritional supplement?
- Even though you do not use nutritional supplements, rank which brand you are most familiar with?

The questionnaire was designed to understand nutritional supplements usage patterns amongst UKZN MBA students. The questionnaire provided answers to the demographics of the UKZN MBA students and their importance in relation to consumer consumption patterns. The consumer's usage patterns illustrated who the consumers were and what products they have purchased. The questionnaire also provided reasons to why consumers do not purchase nutritional supplements. The questionnaire responses highlighted potential gaps in the nutritional supplements market which organisations could target.

### **3.8 Pretesting and Validation**

The questionnaire was sent to 15 MBA students as a pilot study. This is known as pre-testing and is done to ensure that the respondents understood the questionnaire, and that there was no ambiguity in the questions asked. This process is important to get useful feedback on all aspects of the questionnaire. Each respondent was questioned in detail on the important aspects of the questionnaire so as to ensure that these were linked to the objectives. Once pre-testing was analysed, adjustments were made to ensure that the data obtained from the questionnaire was correct. The questionnaire was amended primarily because of branching errors. Branching is where an answer to a question will automatically take the participant to a next question. The pilot study tested that the respondents understood the questionnaire. A major feedback from the respondents was their lack of understanding of the word nutraceutical. This resulted in changing the word for most of the questions from nutraceuticals to nutritional supplements. This improved the validity of the instrument.

### **3.9 Analysis of the Data**

According to Render, Stair and Hanna (2007), quantitative data can be collected by means of a questionnaire. Once data has been recorded and saved, it can be statistically tested. The

occurrence of 'dirty' data, amongst clean recorded data can lead to incorrect results, probabilities, and estimates (Render *et al*, 2007). The survey data base called QuestionPro was used to determine which respondent did not complete the survey. The data of those respondents who did not complete the survey was removed from the survey.

According to Trochim and William (2006), descriptive frequency statistics can be used for describing data on the group being studied. Descriptive statistics use methods such as means to summarise the sample from which conclusions can be drawn. According to Kroenke and Auer (2007), descriptive statistics is the presentation of the data in a meaningful way which allows the researcher to interpret of the data. The researcher used descriptive frequency statistics to analyse and measure the respondents' responses to the questions in the survey. Descriptive analysis was used to identify the nutritional supplement consumption patterns amongst the UKZN MBA students. Frequency tables and graphs were used to present the percentages of the different factors in each question. Cross tabulation was used to measure and analyse the relationship between demographics and consumption patterns of nutritional supplements. The researcher was able to draw conclusions from the descriptive analysis which will be used to identify gaps in the markets and make recommendations to grow the nutritional supplement market.

### **3.10 Summary**

The chapter introduced the research methodology and data collection strategies for the study. It showed that the aim and objectives of the research were achieved by collecting and analysing data. The data was needed to solve the research problem. The construction of the questionnaire required careful planning. Presentation, validation and administration of the questionnaire provided the processes for quality data collection. The analysis of data introduced the types of statistics used in the study. The next chapter presents the results of the study.

## **CHAPTER FOUR**

### **PRESENTATION OF RESULTS**

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#### **4.1 Introduction**

The purpose of this chapter is to present the results of the data gathered from the research. The population size of UKZN MBA students was 250, the sample size was 152 at confidence level of 95% and margin error of 5%. However, due to branching in the questionnaire the n value changed based on the number of respondents who answered the questions. The data was collected by means of an electronic questionnaire. Descriptive and frequency statistics are presented as numerical data, tables and graphs. Inferential statistics were also used to determine correlations between selected variables. Data was analysed using software called QuestionPro and SPSS. The software was also used to examine the relationship between data. The results presented address the five research objectives and provide the solution to understanding the consumption patterns of nutritional supplements of the UKZN MBA students.

#### **4.2 Objective One: Determine whether demographics influenced the use of nutritional supplements**

The total number of people who started the survey was 164. One hundred and fifty two people completed the survey therefore 12 people did not complete the questionnaire. According to the sample size table in Appendix 3, it is evident that for a population of 250, a sample of 152 is required in order for the results to be generalisable to the population. The demographics of the respondents was analysed according to gender, age, race and employment status. Table 4.1 illustrates the demographics of the respondents who answered the questionnaire.

Description	Percentage (%)
<b>Gender</b>	
Male	63.8 %
Female	36.2 %
<b>Age</b>	
20-29	13.0 %
30-39	40.1 %
40-49	35.2 %
50-59	11.7 %
<b>Race</b>	
White	37.5 %
Indian	30.6 %
Black	26.3 %
Coloured	3.8 %
Other	1.8 %
<b>Employment</b>	
Full Time	93.2 %
Students	3.1 %
Unemployed	1.9 %
Part Time	1.2 %
Casual	0.6 %

**Table 4.1 Demographic characteristics of the respondents (n=152)**

Table 4.1 illustrates that the majority of the respondents were male (63.8 %), with women making up 36.2%. The table further indicates that the majority (40.1%) of the respondents were aged between 30-39 years. This was followed by 35.2 % aged 40-49, 13.0% aged 20 -29, and 11.7% aged 50 -59.

The respondents were primarily Whites (37.5%), followed by Indians (30.63%) and Blacks (26.25%). The smallest number of the respondents were Coloureds at 3.75% and other at 1.88%. The majority of the respondents indicated that they were employed full time (93.2%).

This was followed by students (3.11%), unemployed (1.86%), part time workers (1.2%) and casual workers (0.6%).

Table 4.2 shows the race and age of the respondents that consume nutritional supplements

<b>Race</b>	<b>20-29</b>	<b>30-39</b>	<b>40-49</b>	<b>50-59</b>	<b>Total</b>
Black	3.8%	11.3%	8.8%	2.5%	26.4%
Coloured	0%	1.9%	1.9%	0%	3.8%
Indian	3.9%	15.7%	10.1%	2.5%	32.2%
White	4.4%	10.0%	15.7%	7.0%	37.1%
Other	0.2%	0.3%	0%	0%	0.5%
<b>Total%</b>	<b>12.3%</b>	<b>39.2%</b>	<b>36.5%</b>	<b>12.0%</b>	<b>100%</b>

**Table 4.2 Comparison between race and age of the respondents who consume nutritional supplements (n= 74)**

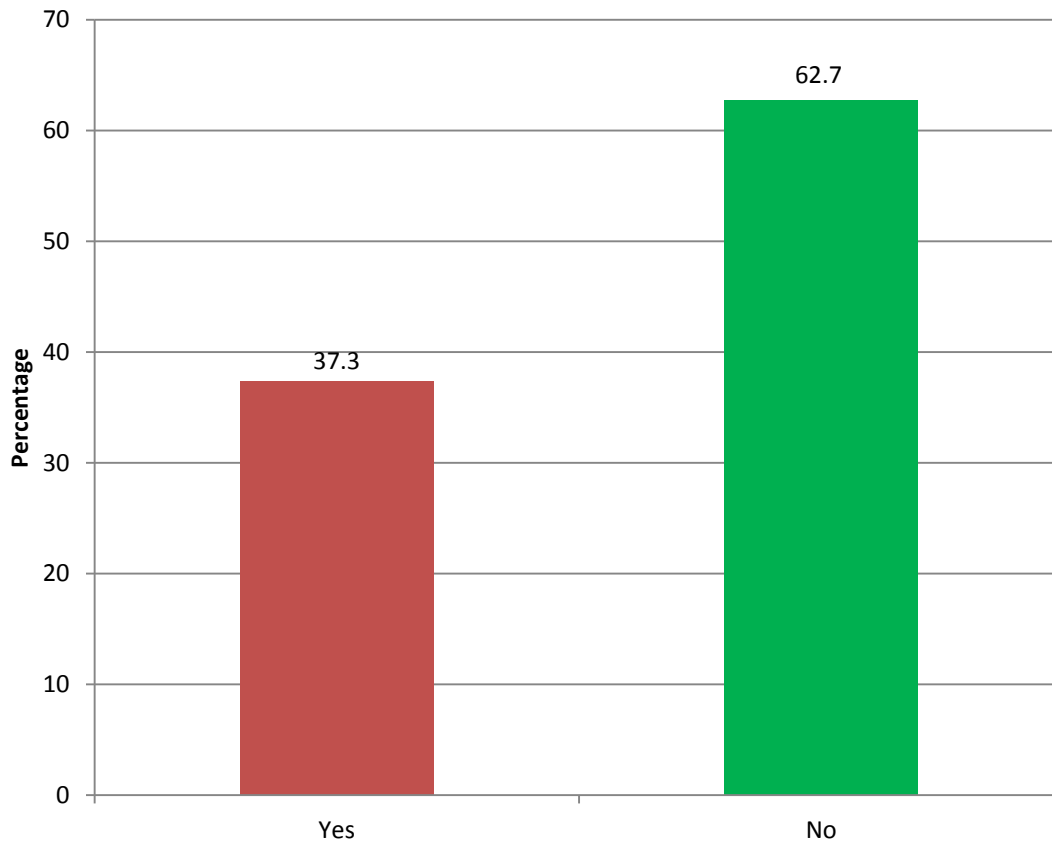
Table 4.2 indicates that the majority of the respondents who consumed nutritional supplements were between the ages of 30 and 39 years in all race groups with the exception of Whites. The majority of White respondents were between the ages of 40-49 years.



### 4.3 Objective Two: Determine respondents' understanding of the term Nutraceutical

#### 4.3.1 Respondents' understanding of the term nutraceutical

Figure 4.1 indicates whether respondents understood the term nutraceutical.

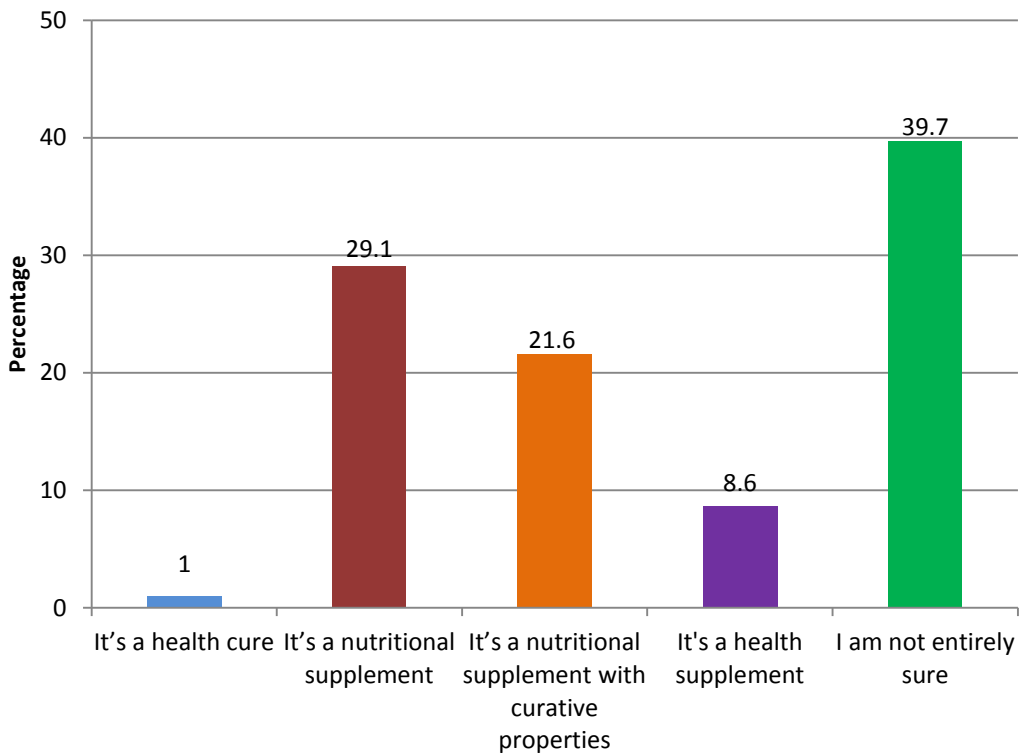


**Figure 4.1 Respondents understanding of the term nutraceutical (n=152)**

It is evident from Figure 4.1 that that the majority (62.7%) of the respondents did not understand what nutraceuticals were.

### 4.3.2 Respondents' understanding of the definition of Nutraceutical

Figure 4.2 illustrates the different meanings attached by respondents to the term nutraceuticals.



**Figure 4.2 Definitions of the term nutraceutical (n=152)**

Figure 4.2 indicates that only 29.1 % of the respondents knew that a nutraceutical is a nutritional supplement. The majority (39.7%) of the respondents were “not entirely sure” of the meaning of nutraceutical. Surprisingly 21.6% of the respondents were under the impression that nutritional supplements had curative properties. Only 8.6% indicated that it was a health supplement and a small proportion (1.0%) felt that this was a health cure. None of the respondents thought that nutraceuticals were a means to prevent illness.

Table 4.3 indicates a further breakdown into the gender understanding of the term nutraceutical.

Gender	It is a nutritional supplement.	It is a health supplement	It is a health supplement with curative properties	It is a health cure.	I am not entirely sure.	Total
Male	19%	4.3%	10.8%	1%	29.6%	64.7%
Female	10.1%	4.3%	10.8%	0%	10.1%	35.2%
Total	29.1%	8.6%	21.6%	1%	39.7%	100%

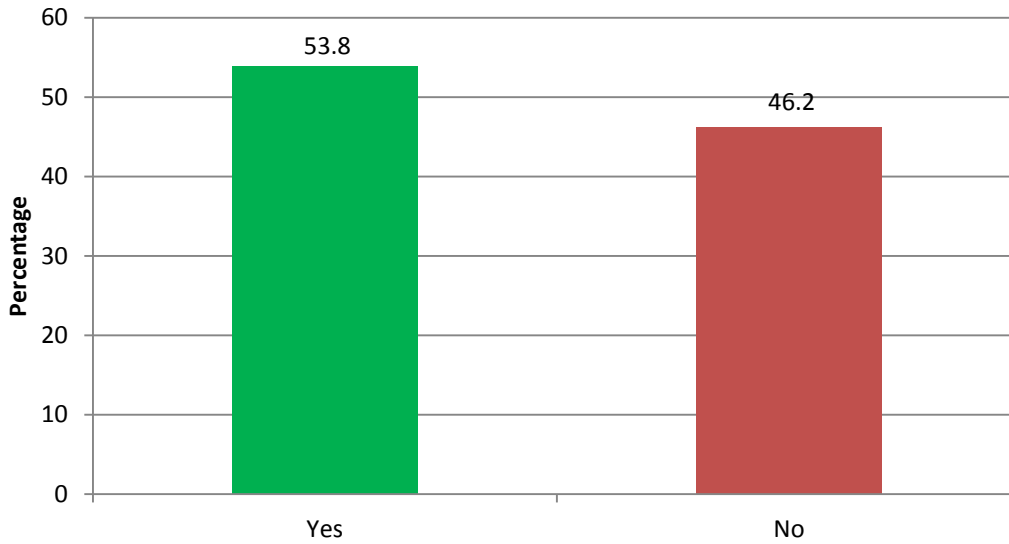
**Table 4.3 Gender understanding of the term nutraceutical (n=152)**

The majority (39.7%) of the respondents were not entirely sure of the meaning of nutraceuticals. 29.6% of male and 10.1 % of females respondents were not entirely sure what the term nutraceutical meant. This was followed by 29.1% of the respondents who knew what nutraceutical means. Of the respondents who understood the term to mean nutritional supplements, 19% were male and 10.1% were female.

#### 4.4 Objective three: The consumption patterns of nutritional supplement users.

##### 4.4.1 Respondents' consumption of nutritional supplements

Figure 4.3 shows whether respondents consumed nutritional supplements.



**Figure 4.3 Respondents that consume nutritional supplements (n=139)**

Figure 4.3 indicate that just over half (53.8%) of the respondents consumed nutritional supplements, with 46.2% saying that they did not consume nutritional supplements.

Table 4.4 illustrates the gender breakdown of respondents who consume nutritional supplements.

Gender	Do you consume nutritional supplements?		
	Yes	No	Total
Male	32.1%	32.1%	64.2%
Female	21.7%	14.1%	35.8%
Total	53.8%	46.2%	100%

**Table 4.4 Gender consumption of nutritional supplements (n=139)**

Table 4.4 indicates that that 21.7% of females consumed nutritional supplements. There was a 50/50 split between those males who consumed and those who did not. However, in total males consumed more nutritional supplements than women.

#### 4.4.2 The relationship between race and consumption of nutritional supplements

Table 4.5 illustrates the relationship between race and the consumption of nutritional supplements.

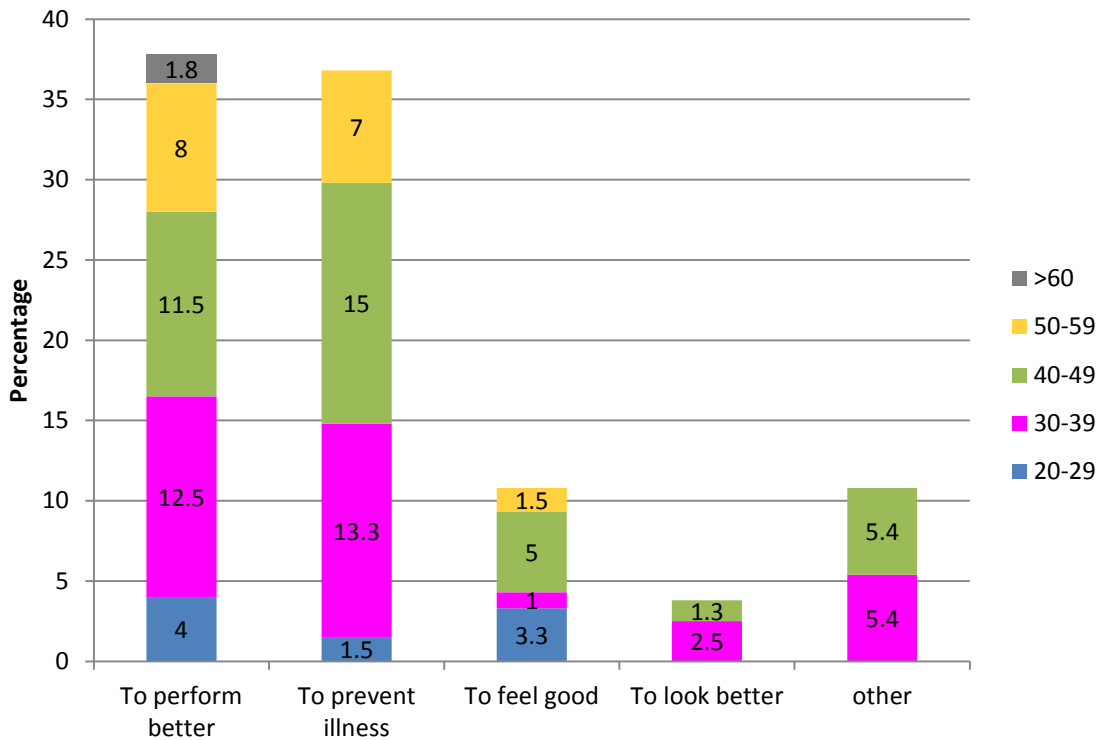
Race	Do you consume Nutritional Supplements?		
	Yes	No	Total
Black	10.1%	15.8%	25.9%
Coloured	3.1%	0.1%	3.2%
Indian	18.2%	12.9%	31.1%
White	21.4%	16.4%	37.8%
Other	1.0%	1.0%	2.0%
Total	53.8%	46.2%	100%

**Table 4.5 The Relationship between race and the consumption of nutritional supplements (n=139)**

Table 4.5 indicates that 21.4% of the Whites consumed nutritional supplements. This was followed by Indians at 18.2 %, Blacks at 10.1%, Coloureds at 3.1% and Other at 1.0 %. It is clear that fewer Blacks consumed nutritional supplements than Indians and Whites. Coloured consumed the least nutritional supplements.

### 4.4.3 Reasons why respondents consumed nutritional supplements

Figure 4.4 illustrates the reasons why the respondents consumed nutritional supplements.

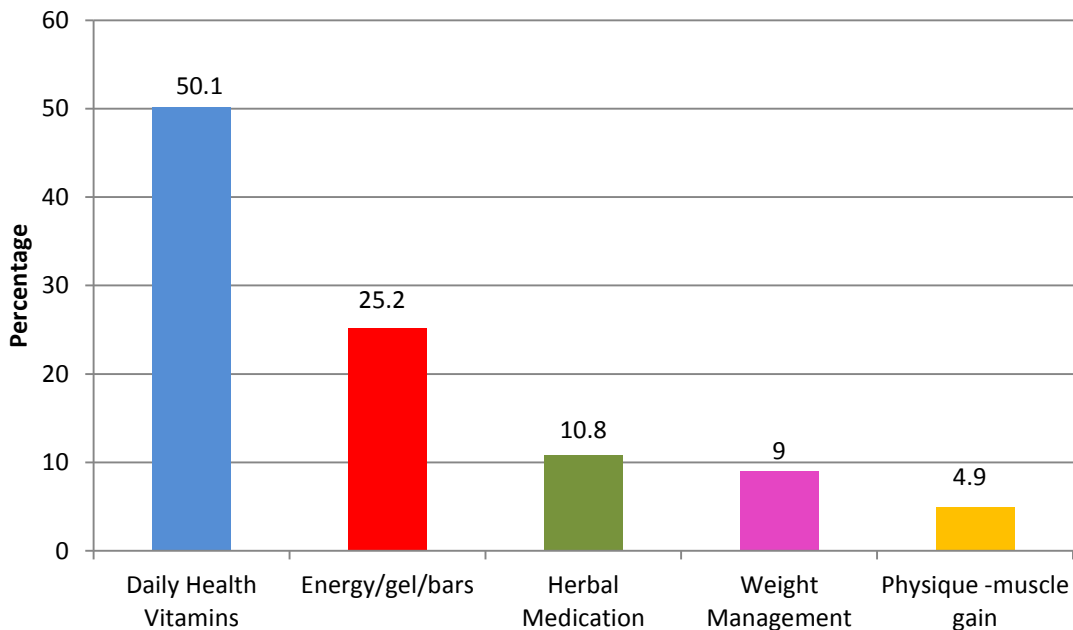


**Figure 4.4 Respondents' reasons for nutritional supplement consumption (n=74)**

Figure 4.4 illustrates that majority of respondents across all ages took nutritional supplements to either perform better (37.8%) or to prevent illness (36.8%). The lowest response rates from the respondents indicated that they took nutritional supplements to feel good (10.8%) and to look better (3.8%).

#### 4.4.4 Type of nutritional supplements respondents consumed

Figure 4.5 illustrates the type of nutritional supplements consumed by the respondents.



**Figure 4.5 Type of nutritional supplements consumed (n=74)**

Figure 4.5 indicates that the majority (50.1%) of the respondents took daily health vitamins. This was followed by energy drinks/gels and bars (25.2%), herbal medication (10.8%), weight management supplements (9.0%) and physique - muscle gain (4.9%).

#### 4.4.5 Consumption patterns of nutritional supplements

Table 4.6 illustrates the respondent's frequency of consumption of nutritional supplements.

Products	Consumption pattern			
	Daily	Weekly	Monthly	Never
Daily Health Vitamins	78%	7.4%	8.9%	5.7%
Energy drinks/gels/bars	9%	50%	28%	13%
Weight Management	12.5%	12.5%	7.0%	68%
Physique-muscle gain	8%	6%	5%	81%
Herbal medication	27%	20%	4.5%	48.5%

**Table 4.6 Frequency of consumption of nutritional supplements (n=74)**

Table 4.6 illustrates that the majority (78%) of the respondents consumed health vitamins on a daily basis. This was followed by weekly (7.4%), monthly (8.9%) and never (5.7%). It is evident from Table 4.6 that the majority (50%) of the respondents consumed energy drinks/gel and bars on a weekly basis. This was followed by monthly (28%), never (13%) and daily (9%).

Table 4.6 illustrates that the majority (68%) of the respondents never consumed weight management supplements. The remainder of the respondents took a weight management supplement daily (12.5%), weekly (12.5%), and monthly (7%). Table 4.6 shows that herbal medication was not consumed by many of the respondents (48.5%) with the remainder taking these on a weekly basis (20%), daily (27%) and monthly (4.5%).

It is evident from Table 4.6 that the majority (81%) of the respondents never took physique-muscle gain supplements. This was followed by respondents who used physique-muscle gain supplements weekly (6%), daily (8%) or monthly (5%).

#### 4.4.6 Gender consumption patterns of five nutritional supplement categories

Table 4.7 illustrates the gender preferences for nutritional supplements.

Gender	Daily Health Vitamins	Energy drinks/gels/bars	Weight Management	Physique-muscle gain	Herbal Medication	Total
Male	25.2%	15.3%	4.5%	4.5%	6.3%	55.8%
Female	25.2%	10%	4.0%	0%	5.0%	44.2%
Total	50.4%	25.3%	8.5%	4.5%	10.8%	100%

**Table 4.7 Gender consumption of nutritional supplement categories (n=74)**

Table 4.7 illustrates that the majority (25.2%) of male and female consumed daily health vitamins. This was followed by the consumption of energy drinks/gel/bars and by weight management supplements. Herbal medication was consumed more by male and female respondents than weight management supplements. None of the females took physique-muscle gain products.



#### 4.4.7 Race consumption patterns of respondents of five nutritional supplement categories

Table 4.8 illustrates different nutritional supplement consumption amongst race groups.

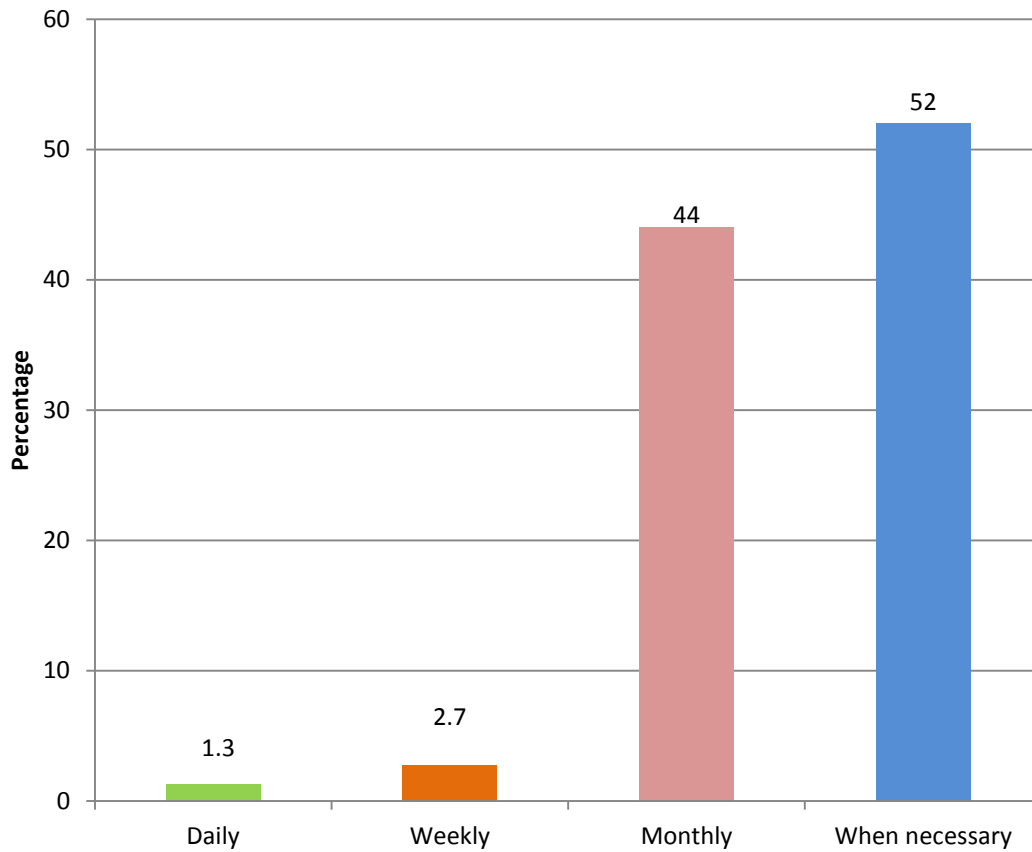
Race	Daily Health Vitamins	Energy drinks/gels/bars	Weight Management	Physique-muscle gain	Herbal Medication	Total
Black	10.9%	7.3%	1.0%	0%	2.8%	22%
Coloured	1.8%	1%	1%	1%	0%	4.8%
Indian	19%	7.3%	4.5%	3.5%	1.7%	36.0%
White	17.2%	10%	2.7%	0%	6.3%	36.2%
Other	1%	0%	0%	0%	0%	1%
Total	49.9%	25.6%	9.2%	4.5%	10.8%	100%

**Table 4.8 Race consumption of nutritional supplement categories (n=74)**

Table 4.8 illustrates that based on maximum consumption per category Indians were the highest consumers of daily vitamins (19%), weight management (4.5%) and physique-muscle gain supplements (3.5%). Whites were the highest consumers of energy drinks/gels/bars (10%) and herbal medication (6.3%).

#### 4.4.8 Respondents' frequency of purchase of nutritional supplements

Figure 4.6 illustrates the frequency of purchase of nutritional supplements.



**Figure 4.6 Respondents' frequency of purchase of nutritional supplements (n=74)**

Figure 4.6 indicates that the majority of the respondents bought nutritional supplements only when necessary (52%) or monthly (44%). This was followed by respondents who bought nutritional supplements weekly (2.7%) and daily (1.3%).

#### 4.4.9 Purchase patterns of five nutritional supplement categories

Table 4.9 illustrates the purchase patterns of nutritional supplements across five categories.

Products	Frequency of purchase				Total
	Daily	Weekly	Monthly	Never	
Daily Health Vitamins	0%	0%	27.0%	23.4%	50.4%
Energy drinks/gels/bars	0%	1.0%	7.2%	17.1%	25.3%
Weight Management	0%	0%	3.6%	5.4%	9%
Physique – muscle gain	0%	0%	1.0%	3.6%	4.6%
Herbal medication	0%	1%	4.4%	5.3%	10.7%
Total	0%	2%	43.2%	54.8%	100%

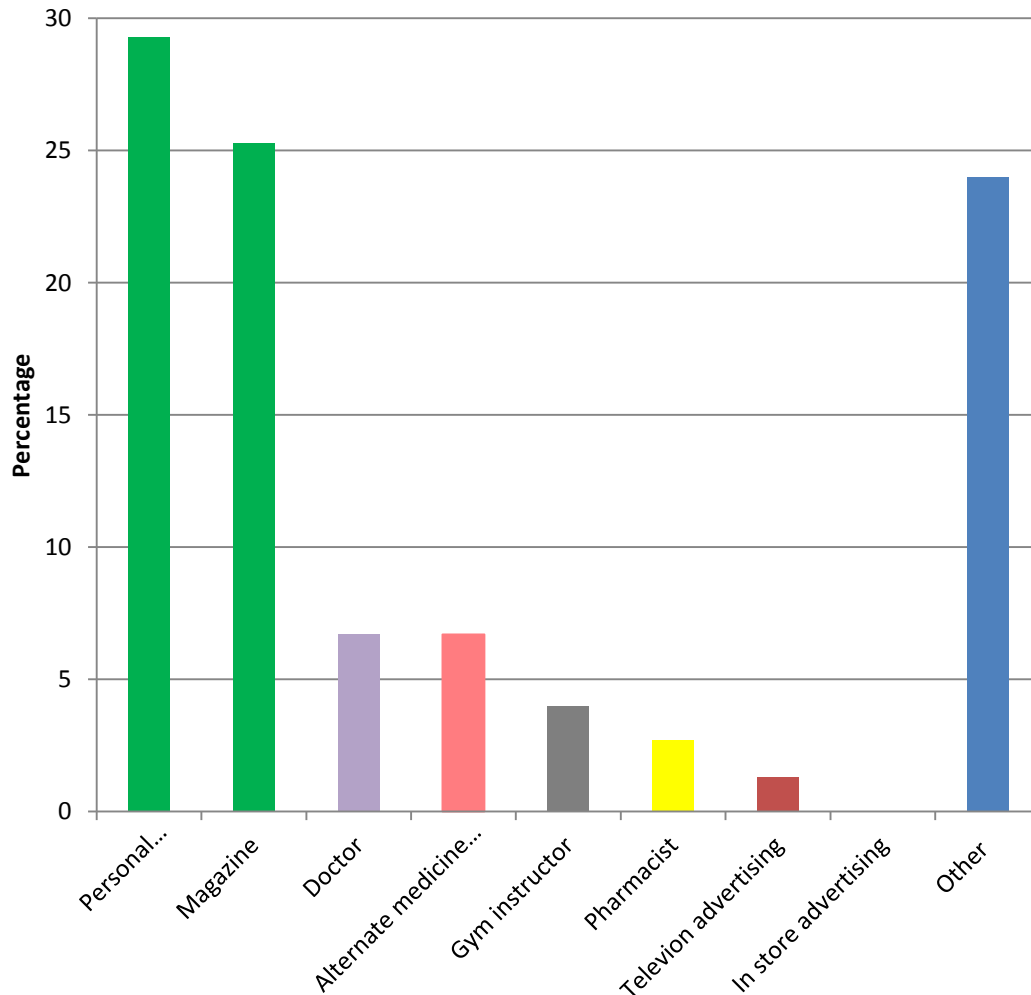
**Table 4.9 Purchase patterns of respondents across five nutritional supplement categories (n=74)**

The majority (27.0%) of the respondents purchased daily health vitamins on a monthly basis. This was followed by predominately monthly purchases of energy drinks/gel/bars (7.2%), herbal medication (4.4%), weight management (3.6%) and physique (1.0%). The total monthly purchases across the five categories represented 43.2% and weekly purchases represented 2%. However, 54.8% of the respondents never bought nutritional supplements. This indicates that nutritional supplement was bought by partner or family members.

## 4.5 Objective Four: Determine what Brands and Products were consumed

### 4.5.1 What prompted respondents to buy nutritional supplements?

Figure 4.7 illustrates who, or what, influenced the consumers' decision to purchase nutritional supplements.



**Figure 4.7 Influence's on respondents to buy nutritional supplements (n=74)**

Figure 4.7 indicates that the two main factors influencing consumers to purchase nutritional supplements were personal recommendation (29.3%) and magazines (25.3%). This was followed equally by recommendations from doctors (6.7%) and alternate medicine practitioners (6.7%). Four percent of respondents were influenced by gym instructors, followed by pharmacists (2.7%), and television advertising (1.33%). In-store advertising had no influence on purchases.

#### 4.5.2 Outlets where respondents purchase nutritional supplements

Table 4.10 illustrates which outlets respondents preferred to purchase their nutritional supplements from.

Products	Outlets				
	Pharmacy	Retail stores	Health shops	Supermarkets	On-line
Daily Health Vitamins	46.2%	19.5%	17.9%	16.4%	0%
Energy drinks/gels/bars	6.5%	24%	6.5 %	63%	0%
Weight Management	17.6%	47%	29.4%	6%	0%
Physique-muscle gain	28.6%	35.7%	21.4%	14.3%	0%
Herbal medication	24%	8%	56%	12%	0%

**Table 4.10 Outlets where respondents purchased their nutritional supplements (n=74)**

Table 4.10 indicates that the majority (46.2%) of the respondents bought their daily vitamin supplement from pharmacies. This was followed by retail stores (19.5%), health stores (17.9%) and supermarkets (16.4%). None of the respondents purchased daily vitamins on-line. It is evident that the majority (63%) of the respondents bought energy drinks/gels and bars at supermarkets. This was followed by purchases at retail stores (24%) and both pharmacy and health stores (6.5%). None of the respondents purchased physique-muscle gain supplements on-line.

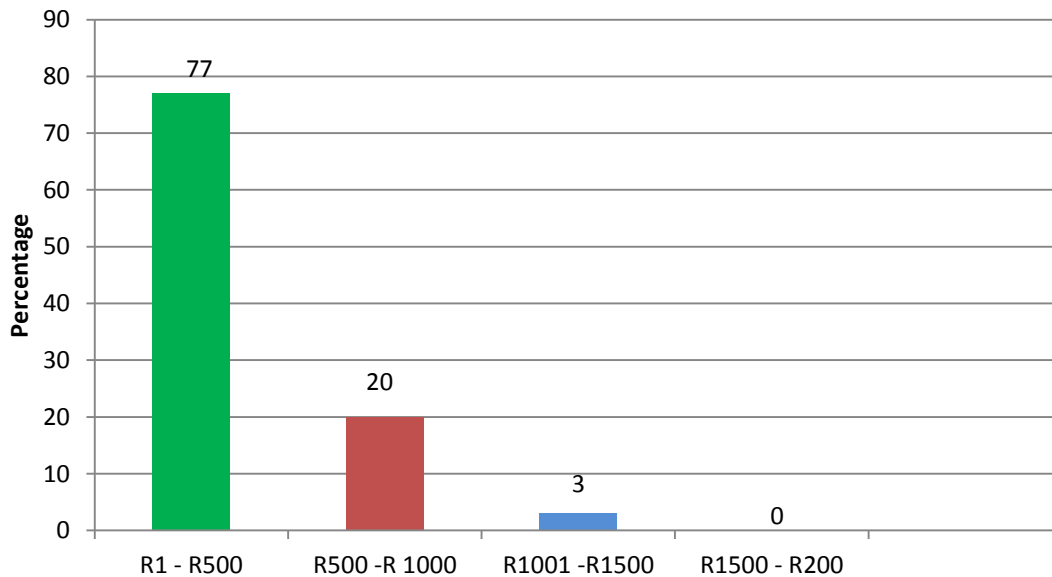
The majority (47%) of respondents bought weight management supplements from retail stores. This was followed by health shops (29.4%), pharmacies (17.6%) and supermarkets (6%). Table 10 shows that the majority (35.7%) of the respondents bought physique-muscle gain supplements from retail stores. This was followed by pharmacies (28.6%), health shops (21.4%) and supermarkets (14.3%). None of the respondents purchased physique-muscle gain supplements on-line.

The majority (56%) of respondents bought herbal medication from health shops. This was followed by pharmacies (24%), supermarkets (12%) and retail stores (8%). It is evident from

the results that none of the respondents purchased any herbal medication on-line.

#### 4.5.3 Respondents' monthly spending on nutritional supplements

Figure 4.8 indicates the total amount of money spent monthly on nutritional supplements.



**Figure 4.8 Respondents monthly spend on nutritional supplements (n=74)**

It is evident from Figure 4.8 that the majority (77%) of the respondents spent R500 per month or less on nutritional supplements. This was followed by R500-R1000 per month at 20% and R1001-R1500 per month at 3%. None of the respondents spent more than R1501 on nutritional supplements.

#### 4.5.4 Nutritional supplement brand familiarity

The data in Table 4.11 represents the mean value, which indicates which brands respondents were most familiar with. The lowest mean value indicated the brands the respondents were most familiar with due to the manner in which the question was asked.

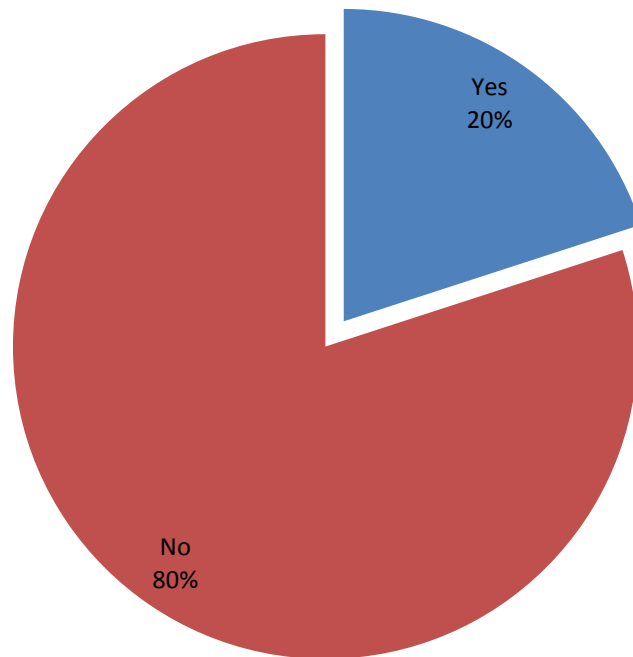
BRANDS	Mean
Vital	2.45
Bettaway	3.64
USN	3.65
Natrodale	4.05
Musclescience	4.37
Bioharmony	4.68
SSN	6.13
Muscletech	6.52

**Table 4.11 Nutritional supplement brand familiarity (n=74)**

Table 4.11 indicates that respondents were most familiar (ranked at 2.45) with the Vital brand. The second most familiar brand was Bettaway, ranked at 3.64. Third was USN ranked at 3.65, fourth was Natrodale ranked at 4.05, fifth was Musclescience ranked at 4.37 and sixth was Bioharmony ranked at 4.68. The least familiar brands were SSN ranked at 6.13 and Muscletech ranked at 6.52.

#### 4.5.5 Respondents' purchase of Musclescience products

Figure 4.9 indicated how many of the respondents purchased Musclescience products. Fifteen respondents purchased Musclescience products.



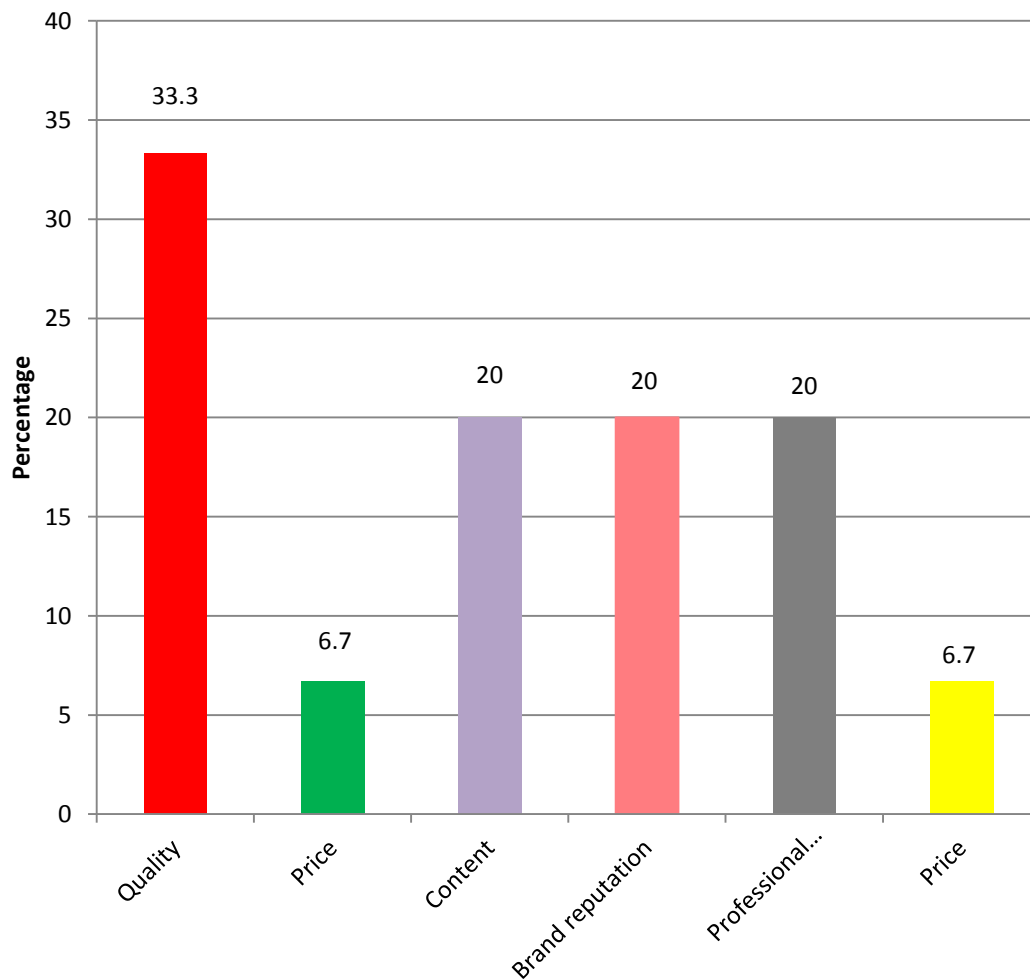
**Figure 4.9 Consumers that bought Musclescience products (n=74)**

It is evident from Figure 4.9 that the majority (80%) of the respondents did not purchase Musclescience products.



#### 4.5.6 Reason for purchasing Musclescience products

Figure 4.10 indicates the reason why the respondents purchased Musclescience products.



**Figure 4.10 Reasons for purchasing Musclescience products (n=15)**

Figure 4.10 indicates that 33.3% of the respondents who purchased Musclescience products did so due to their quality. This was followed by content (20%), brand reputation (20%) and professional recommendation (20%). Only 6.7% of the respondents purchased Musclescience products based on price.

#### 4.5.7 Musclescience products choice and frequency of purchase by respondents

Table 4.12 illustrates the respondents' frequency of purchase of Musclescience products.

Products	Frequency of purchase			
	Daily	Weekly	Monthly	Never
Daily Health Vitamins	27.3%	27.3%	36.3%	9.1%
Energy drinks/gels/bars	7.7%	23%	61.6%	7.7%
Weight Management	20%	10%	60%	10%
Physique-muscle gain	11.1%	0%	56.6%	32.3%

**Table 4.12 Musclescience product category choice and frequency of purchase by respondents (n=15)**

Table 4.12 indicates that the majority (36.3%) of the respondents bought vitamins on a monthly basis. This was followed by daily (27.3%), and weekly (27.3%) purchases, while 9.1% of the respondents never bought vitamins.

The majority (61.6%) of the respondents purchased energy drinks/gel/bars on a monthly basis. This was followed by weekly (23%) and daily (7.7%) purchases. Only 7.7% of the respondents never bought energy drinks/gel/bars.

The table suggest that the majority (60%) of the respondents bought weight management products on a monthly basis. This was followed by daily (20%), and weekly (10%) purchases, while 10% of the respondents never bought weight management products. The majority (56.6%) of the respondents purchased physique-muscle gain products on a monthly basis. This was followed by daily purchases (11.1%). However, no purchases were made weekly. 32.3% of respondents never bought physique-muscle gain products.

#### 4.6 Objective five: Determine why non-users choose not to use nutritional supplements

##### 4.6.1 Reasons why respondents do not use Musclescience products

The data in Table 4.13 represents the mean values that were analysed from the reasons why respondents did not use Musclescience products.

Reasons for not using Musclescience products	Mean
Poorly advertised	2.59
Poor brand reputation	3.09
Unavailable where they shop	3.64
Limited range	3.66
Poor content	3.85
Poor quality	3.92

**Table 4.13 Reasons why respondents do not use Musclescience products (n=59)**

Table 4.13 shows that the main reason for consumers not purchasing Musclescience products was due “to poor marketing”, ranked at 2.59. The second reason given was “poor brand reputation” (3.09). The third reason was “unavailability where they shopped” (3.64), followed by “limited range” (3.66) and “poor content” (3.85). Quality (3.92) was the least important reason for not consuming Musclescience products.

#### 4.6.2 Why respondents do not use nutritional supplements?

Table 4.14 presents the reasons why the respondents did not use nutritional supplements.

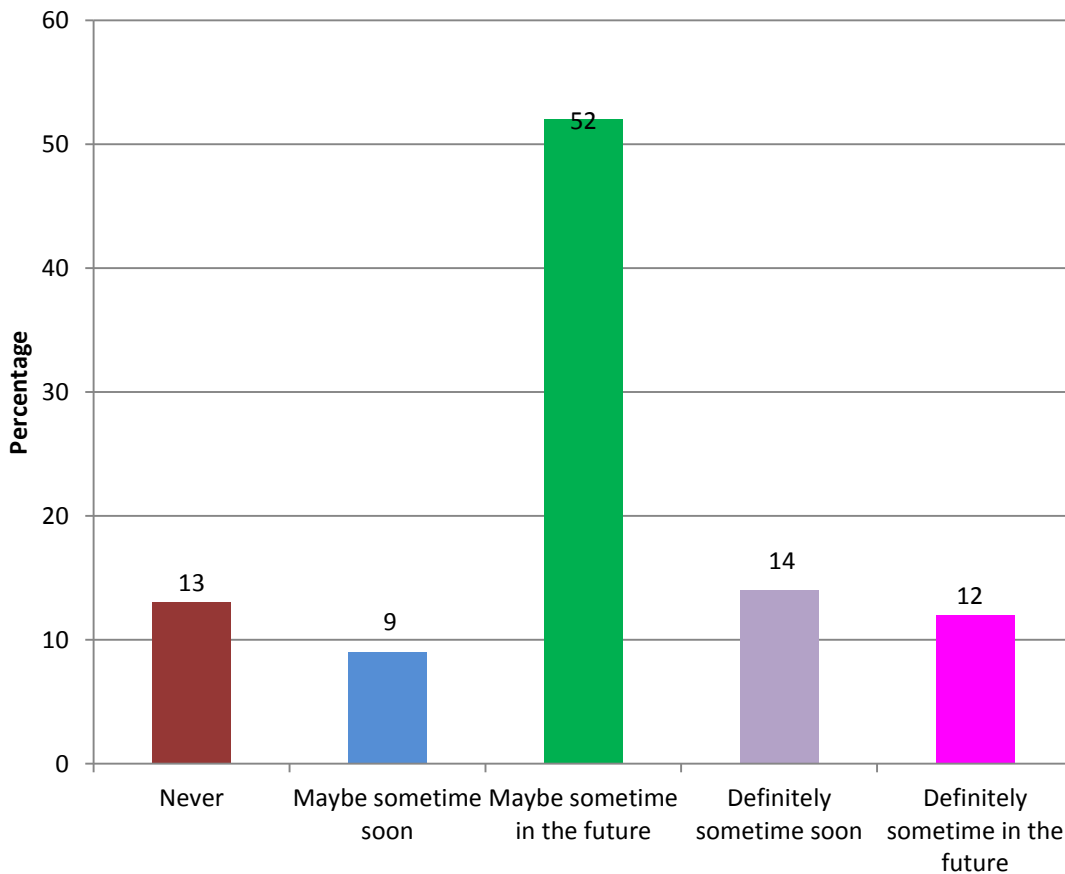
Reasons why nutritional supplement are not used	Percentage
I prefer to eat healthily	41%
I prefer to exercise	13%
I prefer prescription medication	7%
I don't believe in nutritional supplement	13%
I don't need them	21%
I cannot afford them	5%

**Table 4.14 Reasons why respondents do not use nutritional supplements (n=124)**

Table 4.14 indicates that the majority (41%) of the respondents did not use nutritional supplements because they preferred to eat healthily. This was followed by “I do not need them” (21%), “I don't believe in nutritional supplements” (13%), “I prefer to exercise” (13%) and “I prefer prescription medication” (7%). Only 5% of the respondents indicated that they could not afford to use nutritional supplements.

### 4.6.3 Would respondents consider using nutritional supplements in the future?

Figure 4.11 illustrates whether the respondents would purchase nutritional supplements in the future.



**Figure 4.11 Use of nutritional supplements in the future (n=124)**

Figure 4.11 show that the majority (52%) of the respondents indicated that they might use nutritional supplements in the future. This was followed by “Definitely sometime soon” (14%), “Definitely sometime in the future” (12%), and “Maybe sometime soon” (9%). 13% of the respondents stated that they would never use nutritional supplements.

#### 4.6.4 Nutritional supplements which are most important?

The data in Table 4.15 represents the mean values that determined which nutritional supplements were the most important.

<b>Rank Supplement product</b>	<b>Mean</b>
Daily Health Vitamins	1.71
Energy drinks/gels/bars	2.91
Herbal medication	2.93
Weight management	3.45
Physique – muscle gain	3.81

**Table 4.15 Nutritional supplements which are most important to consumers (n = 124)**

Table 4.15 indicates that the majority of the respondents ranked vitamins as the most important nutritional supplement with a mean of 1.71. The second most important was energy drinks/bars/gels (2.91), third was herbal medication (2.93) and fourth was weight management supplements (3.45). The least important nutritional supplement was physique-muscle gain with a mean of 3.81.

#### 4.6.5 Factors which influence respondents' choice of nutritional supplements

The data in Table 4.16 represents the mean values that determined which factors influenced the respondents' reasons for taking nutritional supplements.

<b>Reason for nutritional product selection</b>	<b>Mean</b>
Product quality	2.18
Professional recommendation	2.59
Product content	2.91
Price	3.39
Brand	3.64

**Table 4.16 Factors which influence respondents' choice of nutritional supplements (n = 124)**

Table 4.16 indicates that the main reason for product selection was product quality, ranked 2.18. The second most important factor was professional recommendation (2.59), third was product content (2.91) and fourth was price (3.39). The least important reason for selecting nutritional supplements was brand, which was ranked at 3.64.

#### 4.6.6 Brand awareness of nutritional supplements

The data in Table 4.17 represents the mean values that were analysed from the respondents and the brands that they were most familiar with.

<b>Brands</b>	<b>Mean</b>
Vital	2.37
USN	3.55
Bettaway	4.10
Musclescience	4.33
Natrodale	4.49
Bioharmony	5.30
SSN	5.51
Muscletech	5.59

**Table 4.17 Respondents' familiarity with brands of nutritional supplements (n=124)**

Table 4.17 illustrates that the respondents were most familiar with the Vital brand, with a mean of 2.37. This was followed by USN (3.55), Bettaway (4.1), Musclescience (4.33) and Natrodale (4.49). The least familiar brands were Bioharmony at 5.33, SSN (5.51) and Muscletech (5.59).

#### 4.7 Summary

The purpose of this chapter was to present the results obtained from the data gathered from the questionnaires. The quantitative data was presented as descriptive and frequency statistics, by means of numerical data and bar and pie charts. Inferential statistics were also used to cross tabulate between selected questions using QuestionPro.

It is evident that there is an untapped Black market that does not consume nutritional supplements. Only 25.9% of the respondents were Black and 10.1% of Black respondents took nutritional supplements. The results indicate that there is a decline in nutritional supplement consumption from the age of 40 for all race groups except Whites.

It is evident that the majority of respondents do not understand the benefits of nutritional



supplements. This indicates that marketing and advertising are not targeting the consumer correctly. Consumption patterns varied from product to product based on the consumers' need to lead a healthy life style. The next chapter discusses the findings of the study and links them to the study objectives.

## **CHAPTER FIVE**

### **DISCUSSION**

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#### **5.1 Introduction**

This chapter provides a discussion of the results obtained from the study in relation to the objectives. It outlines the consumption patterns in relation to demographics and product type selection. It confirms whether consumers understood the meaning of the term “nutraceutical” in relation to nutritional supplements. The study also tested the consumers’ understanding and knowledge of nutritional supplements in relation to products and brands. This chapter provides information on why consumers consume nutritional supplements as well as their reasons for not consuming nutritional supplements.

#### **5.2 Objective One: Determine whether demographics influence the use of nutritional supplements.**

The majority (63.8%) of the respondents (Table 4.1) were male and 36.2% of the respondents were female. 93.2% of the respondents were employed on a full-time basis. However Table 4.5 indicated that only 53.8% of the respondents consumed nutritional supplement. This suggested that the majority of respondents earned an income yet just more half (Table 4.4) consumed nutritional supplements even though they may have disposable income to purchase nutritional supplements.

In terms of race groups, as indicated in Table 4.5, 21.4% of the respondents who took nutritional supplements were Whites, followed by Indians (18.2%), Blacks (10.1%) and Coloureds and Other together (4.1%). This indicated that Whites are more likely to consume more nutritional supplements than all the other races. There is thus, an emerging Black and Indian market that should be targeted in order to grow the market for nutritional supplements.

In terms of gender, as depicted in Table 4.4, 32.1% of male respondents consumed nutritional supplements in relation to 21.7% female respondents. This suggested a greater proportion of males are consuming nutritional supplements than females. However, advertisements focus on female consumers as a potential purchaser of nutritional supplements for the family. This can be seen in pamphlets, broadsheets and advertorials in most South African magazines.

The demographics of Durban's working population shows that Black people make up 68% of Durban's population, Indians 20%, White 9% and Coloured 3% (Durban-Ethekwini. 2011). The research suggests that this does not correspond to the demographics of the consumers who take nutritional supplements. Based on statistics currently Whites earn more than Indian, Black, Coloured and other race groups (Statistics South Africa, 2010). However, there is an emerging Black market that should be targeted to grow the market for nutritional supplements. One possibly also needs to consider the educational level of the population that would take nutritional supplements. The more educated the population is, the more the likelihood of them being able to afford nutritional supplements.

Table 4.2 indicated that the majority (75.7%) of the respondents who took nutritional supplements were between the ages of 30 and 49 years. This suggests that older consumers are more likely to take nutritional supplements than younger consumers. This suggests that this age group can afford to purchase nutritional supplements. These consumers are concerned about their health and may use nutritional supplements to enhance their lifestyle. They may not require scheduled drugs at this stage of their life and would rather take nutritional supplements as a preventative measure. This is supported by Herath, Cranfield and Henson study that older consumers perceive the use of nutritional supplements as more beneficial than younger consumers (Herath, Cranfield and Henson, 2008).

### **5.3 Objective Two: Determine respondents' understanding of the term nutraceutical.**

The results, as indicated in Figure 4.1, showed that only 37.3% of the respondents understood the meaning of the term nutraceutical. This response was expected as the term is not commonly used by consumers. Each respondent was given a selection of definitions to assist with the understanding of the term nutraceutical.

Figure 4.2 indicated that respondents were more familiar (29.6%) with the term "nutritional supplements". This indicates that there is a lack of understanding of the term nutraceutical on the part of consumers. Nutritional supplements are a complicated market segment and consumers may not understand the full benefits of taking nutritional supplements. There are a wide variety of nutritional supplements available on the market, which may be overwhelming

for the consumer. Consumers may find it difficult to understand which nutritional supplements offer genuine health benefits (The smart and safe..., 2009). The industry needs to educate and inform consumers of the benefits of nutritional supplements.

The data in Figure 4.4 indicated that the main reason for respondents between the age of 30-49 taking nutritional supplements was to “prevent illness” (36.8%) and to “perform better” (37.8%). This suggests that consumers understood that nutritional supplements are a preventative measure rather than a cure. This further suggested that “feel good” and “look better” factors did not influence their reasons for buying nutritional supplements.

#### **5.4 Objective Three: Determine the consumption patterns of nutritional supplement users**

Table 4.6 indicated that daily health vitamins, (78%) were the most frequently consumed nutraceutical. This suggested that the consumers planned in advance to purchase their health vitamins so that they could be taken daily. Energy drinks/gels and bars were bought weekly, (50%), suggesting that these are impulse purchases, rather than planned purchases. The consumer may not plan in advance to consume energy drinks/gels and bars but may be influenced to do so based on the energy levels required to perform either exercise or work activities.

Physique-muscle gain products were the least consumed as these falls into a niche market such as body building. The consumption patterns were inconsistent, with consumers taking these products either daily (8%), weekly (6%) or monthly (5%). Another reason for this inconsistent consumption might be that people who body build resort to steroids instead of muscle gain supplements, as this is known to be a faster way to gain the required weight and size.

Table 4.6 indicated that the consumption of herbal medication is relatively low in comparison with daily vitamins. This is possibly due to the fact that the urban Black consumer is becoming more cosmopolitan and taking western nutritional supplements rather than traditional medicines. This low consumption could be attributed to the Black consumer who does not understand the benefits of commercialised herbal medication. These products may also have limited marketing exposure to target this consumer.

Table 4.8 indicated that more Indians, (4.5%), consumed weight management supplements than Whites (2.7%). This is in contradiction to current marketing and advertising strategies, which do not portray Indian women and men in weight management supplement adverts. These adverts, found in fashion and health magazines, predominately feature White females.

Table 4.8 also indicated that 36% of Indians consumed nutritional supplements in comparison with 36.2% of White consumers. This is also in contradiction with marketing advertising strategy, as one seldom sees Indian models used in campaigns. Black consumers' consumption of nutritional supplements is lagging at 22%. No Black respondents indicated that they took physique-muscle gain products. The Black market could provide potential growth potential for physique-muscle gain products as Black people comprise 68% of Durban's population (Durban-Ethekwini. 2011).

According to Kotler and Keller (2009), companies need to use advertising campaigns to remind consumers of their existing attributes rather than to change consumers' attitude. Due to experience and learning, people acquire beliefs and attitudes which influence their buying behaviour. To understand consumers' buying decisions marketers need to understand who makes, and has input into, the decision to buy nutritional supplements. Different marketing campaigns must be created to target different types of people. Consumers are constructive decision makers and subject to many conceptual influences (Kotler and Keller, 2009).

Figure 4.9 illustrated that the majority (27%) of the consumers planned their purchase of daily health vitamins on a monthly basis. This was followed by followed by energy drinks (7.2%), herbal medication (4.4%), weight management (3.6%) and physique-muscle gain products (1.0%). This suggests that consumers bought their energy drinks/gels and bars on a monthly basis but may not buy sufficient products to last a month. This purchase pattern reverts from monthly to weekly suggest this is an impulse purchases to meet personal daily requirements/consumption.

#### **5.5 Objective Four: Determine respondents' preference of brands and products.**

Kotler and Keller (2009) suggested that companies need to understand the buying decision process, as it is clear that the buying process starts long before the actual purchase, and has

consequences long afterwards. Figure 4.7 indicated that consumers are influenced to buy nutritional supplements mainly by personal recommendations and magazines. In-store advertising and promotions did not influence the customers' decision to purchase products. This indicated that consumers have already made up their mind as to what brands and products they are going to purchase before going to the store.

Table 4.10 indicates that consumers bought their nutritional supplements from selected outlet stores. The selected outlet store is determined by the type of nutritional supplement that the consumer wants to purchase. The majority of consumers bought daily vitamin supplements from pharmacies. This could be due to the fact that pharmacists are generally knowledgeable about vitamin supplements and their benefits. Consumers preferred to purchase their vitamins from a pharmacy (46.2%) where advice is available on what product is required to improve their health. Vitamins are complicated and consumers seek information regarding product benefits. A pharmacy's marketing strategy is to employ friendly and knowledgeable staff (Pharmacy Business Plan, 2011). Medications are an integral part of some customers' lives. It is important to establish long-term relationships with customers, as this will ensure a loyal customer base for an organisation that sells nutritional supplements.

Table 4.10 indicates that the majority of the consumers bought weight management supplements, (47%), and physique-muscle gain supplements (35.7%) from retail stores. This indicated that the consumer knows what type of product they require before they make their purchase. Both of these products are very personal purchases as they enhance and/or improve the individual's appearance. This suggests that the consumer might not want assistance or advice at store level. Retail stores use contracted promoters at store level to promote products based on customer peak buying times ie weekends. They use point of sale at store level and broadsheet activity to effectively market and sell their products.

Herbal medication is predominantly (56%) bought from health shops due to the complexity of the product range and customers needing advice. These consumers may not have life threatening diseases, but want improve or maintain their health.

Energy drinks/gels and bars are mainly bought from supermarkets and retail stores (24%), as

these are routine response buying behaviour and inexpensive purchases.

Figure 4.8 shows that 78 % of the respondents spent less than R500 per month on nutritional supplements. This was followed R 500-R1000 (20%) and only 2.67% spent more than R1000. This suggests that consumers are not prepared to pay premium prices for nutritional supplements and also that consumers have less disposable income available for luxury products. Thus, companies must review their price point when adding or launching new products in their range. When nutritional supplements are inexpensive for loyal users, they become routine purchase decisions. Consumers are likely to move between products based on intervention (advertising, product failure, new products, out of stock) and resettle into a routine purchase decisions. Therefore, constant marketing activity and re-assurance is required.

The results in Table 4.11 indicated that the majority of the consumers were more familiar with daily vitamin brands such as Vital, Bettaway and Natrodale. Figure 4.9 indicated that only 15 respondent respondents purchased Musclescience products and the main reason for the purchase was due to quality. The respondents mainly bought Physique-muscle gain, energy drinks/gels and weight management products as opposed daily health vitamins. Brand awareness of is promoted in magazines, pamphlets and televised media campaigns. These brands target consumers who want to lead a healthier lifestyle. These consumers are not necessarily sick, but want to feel better. Nutritional supplements are an extension of good eating habits and exercise routines. Due to busy lifestyles, nutritional supplements are necessary to improve one's health.

### **5.6 Objective Five: Determine why non-users choose not to use nutritional supplements.**

Consumer awareness of brands and products influences the decision to purchase nutritional supplements. Table 4.13 indicates that consumers do not buy Musclescience nutritional supplements because the brand is poorly marketed, has a poor brand reputation and is not available in the stores where they shopped. This indicated that the current marketing strategies are not positioning this brand correctly.

Table 4.14 also indicates that consumers do not fully understand why one should take

nutritional supplements, as these supplements do not cure illness, but rather prevent illness. The majority (42%) of respondents as indicated in Table 4.14 said that they prefer to eat healthily as opposed to taking nutritional supplements. Brands should target nutritional supplements together with good eating plans and should encourage and focus on a healthy lifestyle in conjunction with taking nutritional supplements.

Figure 4.11 shows that the majority (87%) of the respondents are willing to take nutritional supplements in the future. This suggested that respondents are willing to consume nutritional supplements but they lack the knowledge on the benefits. Michail (2011) suggested that companies build a sustainable competitive advantage. A leverageable advantage is one where the company comes up with new ways of attracting new consumers based on creating awareness of their products. This could be achieved by improving customer product information, and a quicker returns and delivery policy. This will create high customer value and satisfaction, which will lead to repeat purchases (Michail, 2011).

Table 4.15 indicates that consumers rank daily health vitamins as most important and physique-muscle gain products as least important. This suggested that physique-muscle gain category feel into a niche market and there was little emphasis on this category from the consumer. Table 4.16 indicated that factors such as product quality and professional recommendations strongly influence the consumer as opposed to price and brand.

## **5.7 Summary**

The demographics of the population have a strong impact on the consumption of nutritional supplements. The study indicated that males bought more nutritional supplements than females. The term nutraceutical is not well understood by most consumers. The consumption pattern of nutritional supplements varies from category to category. Demographic characteristics such as gender, age, race and income influence what products consumers purchase. Brands must ensure that they select the correct distribution channels to target their market effectively. Consumers' reasons for not consuming nutritional supplements are due to a lack of understanding of the products. The next chapter presents the conclusions and recommendations of the study.



## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**

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#### **6.1 Introduction**

The aim of this study was to research, analyse and discuss how a business can gain market share by understanding the usage patterns of UKZN MBA students. Consumers were asked a series of questions to understand why they consumed, or did not consume, nutritional supplements. Buying patterns were also identified together with an indication of how much the consumer was prepared to spend on nutritional supplements.

#### **6.2 Solution of the Study's Objectives**

The first objective was to determine the influence of demographics on the use of nutritional supplements. This was met because the study showed that the demographics of the population influenced the consumption of nutritional supplements. The study indicated that consumers between the ages of 30-49 consumed the most nutritional supplements and that males purchased more nutritional supplements than females. There is an emerging Black market that should be targeted to provide growth for nutritional supplements market in South Africa. Business needs to consider the educational level of the population who would purchase nutritional supplements. The more educated the population is, the greater the likelihood of them being able to afford and understand the benefits of nutritional supplements.

The second objective was to determine the consumers understanding of the term 'nutraceutical'. This term was not well understood by most consumers. However, most consumers understood the term 'nutritional supplement'. Business needs to market the understanding of the term nutraceutical in order to improve market share.

The third objective was to determine the consumption patterns of nutritional supplement users. The study showed that consumption patterns varied from category to category (daily health vitamins, energy drinks/gel/bars, weight management and physique-muscle gain). The demographics of the population influenced what products they purchased. Purchase patterns were directly influenced by consumption patterns. This resulted in either a planned purchase or an impulse purchase. Vitamins, weight management and physique-muscle gain products were

more complicated categories as additional information might be required to secure the purchase. This results in “limited decision” buying behaviour. Conversely, energy drinks, gels and bars were not expensive, so they resulted in routine purchase behaviour. Industry needs to determine the consumption patterns of nutritional supplement users.

The fourth objective was to determine what brands and products were used by the respondents. The study’s results suggested that the consumer was predominately influenced by personal recommendations and magazines. Only 1.3% of the respondents indicated that TV advertisements influenced their decision to purchase nutritional supplements. This suggested that consumers needed more information about these products in order to make a purchase.

Businesses need to select the correct distribution channels to target their market for efficiently: different marketing distribution channels attract different types of consumers, which in turns influences buying patterns. Consumer buying behaviour also affected the type of nutritional supplements purchased by consumers. Consumers move between products and brands due to advertising activity. It was evident from the study that respondents purchased nutritional supplement from preferred business outlets. Vitamins were predominately purchased from pharmacies businesses, as consumers needed information on which product would meet their needs. Energy drinks required no additional information for purchase, and thus the supermarket was the preferred business outlet. Supermarkets are usually cheaper than pharmacies and health shops and also have a greater distribution range. Weight management and physique-muscle products were primarily bought from retail businesses. This suggested that the consumer already knows what product they require through personal recommendation and magazine advertisements. Herbal medication requires specialised information and thus the preferred outlet businesses were health shops.

The research showed that the majority of the UKZN MBA students spent less than R500 per month on nutritional supplements. Price points are an important factor when purchasing nutritional supplements. Future studies are required to investigate whether consumers are price sensitive when purchasing nutritional supplements. Brand loyalty must also be investigated and the impact this has on the buying process.

The study indicated that consumers were most familiar with the Vital, Bettaway and USN brands. These are the market leaders in the nutritional supplement industry. Advertising and brand exposure through the correct media channels is critical to the growth of brands and the ability of a business to gain market share. However, this involves large marketing budgets to grow and advertise the brand.

The fifth objective was to determine why non-users did not take nutritional supplements. Consumers' reasons for not consuming nutritional supplements were largely due to a lack of understanding of the products. The study results indicated that most respondents would take nutritional supplements in the future which suggests that business and brands need to improve their level of communication with consumers as to why nutritional supplements are important.

### **6.3 Benefits of the research**

The benefits and contribution of the research work was to understand the usage patterns of consumers as there was limited information regarding this topic. Consumers do not fully understand the benefits of nutritional supplements, and consumption patterns and buying patterns are not consistent. This suggests that consumers do not understand the benefits and the need to take nutritional supplements. There is a significant untapped market across the demographics, which could grow the sales of the nutritional supplement industry. This research will benefit both the suppliers and retailer as it indicates the need to educate the consumer on the benefits of nutritional supplements.

### **6.4 Recommendations**

Consumer buying and consumption patterns are driven by different needs based on product selection. These needs are seasonal and are also influenced by the intrinsic needs of the consumer. According to Carrington, Neville and Whitwell (2010), a differentiation strategy must be used within the marketing mix as several factors affect consumer purchasing behaviour. In the process of creating the right marketing mix, marketing segmentation is critical in order to provide growth in nutritional supplements (Carrington, Neville & Whitwell, 2010).

A clearer marketing message needs to be delivered in terms of why consumers should be taking nutritional supplements. The reason why nutritional supplements are important for one's health should be simplified, using layman's terms as opposed to scientific wording. Other marketing media channels could be explored such as using technology applications and trends. For example Twitter and Facebook can be used to target the different demographic users. This choice of advertising media can also be used to target non-users in educating them on the need and the benefits of using nutritional supplements. This is a direct marketing approach, which will influence future purchases, as well as, educating this market segment on the importance of nutritional supplements. The study found that 87% of the non-users would consider using nutritional supplements. Therefore better communication can have a greater impact on changing consumer's knowledge, attributes and re-shape their decision-making process toward purchasing nutritional supplements. Thus health claims can become an effective method to communicate to the consumers about the health benefits for consuming nutritional supplements.

It is evident that Musclescience was a relatively unknown brand. The main reason for consumers not taking Musclescience products was due to poor marketing and advertising. Musclescience could use the direct marketing approach by engaging with their customers and expanding their distribution footprint into areas where their products are not well marketed. Good inventory controls together with merchandising are needed to ensure that the stores are stocked with the correct product. Stock rotation method such as First In First Out (FIFO) method must be adopted to ensure that the stocks are not pasted their sell by date.

On-line selling could provide growth and reach other target markets in the nutritional supplement industry. This could offer more competitive prices for the consumers. The consumer can afford to buy more with the same disposable income. Brand ambassadors could be established in all main cities (Cape Town, Durban and Johannesburg) in South Africa where they can inform and advise the consumers on what products to purchase. They can also inform them on the benefits of nutritional supplements. The brand ambassadors could also target non-users by recommending a diet plan together with an exercise routine. They could recommend to the non-users which nutritional supplements they should be using, based on their lifestyle.

The study clearly indicates that there is potential growth in using supermarkets as the distribution channel of choice. Supermarkets are convenient and provide a relaxed shopping environment. However, the social dynamics of supermarkets are changing in relation to the target market of these supermarkets. Brands and products must align themselves with the target market of supermarkets.

The study also found that there is an untapped Black market that does not consume nutritional supplements. It is recommended that further studies be undertaken to understand what type of nutritional supplements the Black consumer needs. This would provide potential growth in the nutritional supplement category.

The unique contribution of this study was identifying that there is a relationship between demographics and the consumption of nutritional supplements. Another contribution is that consumers understood the term 'nutritional supplements' whereas the term 'nutraceutical' was not well understood. The study also found that there were distribution channel outlet preferences when purchasing nutritional supplements. The study established what brands and products consumers used. In addition the study provided information on why non-users choose not to use nutritional supplements.

Marketers need to understand who their customers are and where they buy nutritional supplements. Proper market segmentation and distribution channels will target the right consumer to gain market share. This will give the brand a competitive advantage. Businesses face a number of challenges in remaining competitive and gaining market share. Nutritional supplement businesses need to understand who their consumers are, how to attract new consumers and which distribution channels to pursue.

## **6.5 Limitations of the Study**

Limitations of the study include:

1. The study used only quantitative data and not qualitative data.
2. The study was based only on UKZN MBA students which are not representative of the South African population.

3. The study did not include respondents below the age of 24.

## **6.6 Recommendations for Future Studies**

The following are recommendations for future studies that

1. Research data should be obtained from a wider group of consumers.
2. Samples from the outside the UKZN MBA group could provide a greater range of data and create a clearer picture of the entire South African market.
3. A broader demographic range of respondents would provide additional data on the usage patterns amongst the general population.

## **6.7 Summary**

The data collected and analysed in the study suggests that there is a lack of understanding on the part of consumers concerning nutritional supplements. Consumers do not understand the need or the benefits of taking nutritional supplements. Consumption patterns were shown to be influenced by demographics. There is a large percentage of non-users who are willing to take nutritional supplements in the future. A key finding was that there is an “uptapped” market amongst Black consumers.

Businesses need to change their marketing strategies so that they understand their consumers’ needs. Products must be competitively priced and brand awareness needs to be increased. Products must be perceived as convenient to use and provide value for money. Information on nutritional supplements needs to be less complicated and there is a need to inform the consumer about the benefits of nutritional supplements by using selected media channels. Businesses need to educate their consumers, which will increase usage patterns and will thus grow the business market share.

This research has highlighted that there are market opportunities for nutritional supplements producers and sellers to focus on and exploit. The research has also revealed that the suppliers of nutritional supplements need to create greater awareness of nutritional supplements and the benefits of taking them.

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# APPENDIX 1

## Ethical Clearance



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26 April 2011

Mrs L Bright (209510558)  
Graduate School of Business  
Faculty of Management Studies  
Westville Campus

Dear Mrs Bright

PROTOCOL REFERENCE NUMBER: HSS/0173/011M  
PROJECT TITLE: The Usage Pattern of Nutritional Supplements Amongst Durban Consumers

In response to your application dated 18 April 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

**PLEASE NOTE:** Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

  
.....  
Professor Steven Collings (Chair)  
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor: Prof A Singh  
cc. Mrs Christel Haddon

## APPENDIX 2

### Questionnaire

Dear Participant:

MBA Research Project

Researcher: Lizell Bright 083 383 3081

Supervisor: Prof Anesh Singh 031 260 7564

Research Office: Ms P Ximba 031-2603587

I, Lizell Bright, am a MBA student, at the Graduate School of Business, of the University of Kwazulu Natal. You are invited to participate in a research project entitled: The Usage Patterns of Nutritional Supplements Amongst Durban Consumers. The aim of this study is to determine the usage pattern of consumers and whether consumers buy nutritional supplements.

Through your participation I hope to understand consumer buying patterns and trends. The results of the focus group are intended to contribute to growing the nutritional market.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for us to learn your opinions.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business, UKZN. There will be no monetary gain from participating in this survey/focus group.

If you have questions at any time about the survey or the procedures, you may contact Lizell Bright at 083 383 3081 or by email - [lizell.bright@bioscience.co.za](mailto:lizell.bright@bioscience.co.za).

This survey will take approximately 10 minutes to complete the questionnaire.

Thank you very much for your time and support. Please start with the survey now by clicking on the button below.

1) What is your gender?

1. Male
2. Female

2) What is your age?

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. >60

3) What is your race?

1. Black
2. Coloured
3. Indian
4. White
5. Other

4) What is your employment status?

1. Student
2. Unemployed
3. Casual employed
4. Part time employed
5. Full time employed

5) Do you know what Nutraceuticals are?

1. Yes
2. No

6) What is your understanding of the term - Nutraceuticals?

1. It is a nutritional supplement
2. It is a health supplement
3. It is a nutritional supplement that has curative properties
4. It is a health cure
5. It is an illness preventative
6. I am not entirely sure

7) Do you consume nutritional supplements?

1. Yes
2. No

8) Why do you consume nutritional supplement?

1. To prevent illness
2. To perform better
3. To look better
4. To feel good
5. Other

9) What nutritional supplements do you consume?

1. Daily Health Vitamins
2. Energy drinks/gels/bars
3. Weight management supplements
4. Physique - muscle gain
5. Herbal medication

10) How often do you consume the following nutritional supplements?

	Daily	Weekly	Monthly	Never
Daily health Vitamins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy drinks/gels/bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weight management supplements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physique - Muscle gain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Herbal medication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11) How often do you buy your nutritional supplements?

1. Daily
2. Weekly
3. Monthly

4. When necessary

12) What has prompted you to consume nutritional supplements?

1. Recommended by doctor
2. Recommended by alternative medicine practitioner
3. Recommended by pharmacist
4. Recommended by gym instructor
5. Recommended by someone I know
6. Read about it in a magazine
7. In store advertising
8. Television advertising
9. Other

13) Which is the main outlet where you buy your nutritional supplements?

	Supermarket	Retail store	Pharmacy	Health shop	Online
Daily health Vitamins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy drinks/gels/bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weight management supplements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physique - Muscle gain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Herbal medication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14) How much do you spend per month on nutritional supplements?

1. R1 - R500
2. R501 - R1000
3. R1001 - R1500
4. R1501 - R2000
5. R2000>

15) Rank which of the following brands you are familiar with where 1 is the most familiar and 8 is the least familiar.

- Bioharmony \_\_\_\_\_
- Natrodale \_\_\_\_\_
- Bettaway \_\_\_\_\_
- Vital \_\_\_\_\_
- Musclescience \_\_\_\_\_
- USN \_\_\_\_\_
- SSN \_\_\_\_\_
- Muscletech \_\_\_\_\_

16) Do you buy Musclescience products?

1. Yes
2. No

17) If you do buy Musclescience Brands, why do you choose their products

1. Quality
2. Price
3. Content
4. Brand reputation



5. Professional recommendation

18) Which Musclescience product do you buy and how often?

	Daily	Weekly	Monthly	Never
Daily health Vitamins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy drinks/gel/bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weight management supplements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physique - Muscle gain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Herbal medication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19) Please rank the reason why you DO NOT use Musclescience products where 1 is the most important reason and 6 is the least important reason?

- Limited range \_\_\_\_\_
- Poor quality \_\_\_\_\_
- Poor brand reputation \_\_\_\_\_
- Poor content \_\_\_\_\_
- Unavailable where I shop \_\_\_\_\_
- Poorly marketed \_\_\_\_\_

20) Why DO YOU NOT use nutritional supplements?

1. I don't need them
2. I can't afford them
3. I prefer to eat healthily
4. I prefer to exercise
5. I prefer prescription medication
6. I don't believe in nutritional supplements

21) Would you consider using nutritional supplements in the future?

1. Never
2. Maybe sometime soon
3. Maybe sometime in the future
4. Definitely sometime soon
5. Definitely sometime in the future

22) If you were to consider using nutritional supplements, what types would you consider, ranking 1 as the most important and 5 as the least important?

- Daily Health Vitamins \_\_\_\_\_
- Energy drinks/gels/bars \_\_\_\_\_
- Weight management supplements \_\_\_\_\_
- Physique - Muscle gain \_\_\_\_\_
  - Herbal medication \_\_\_\_\_

23) Rank what you would look for when selecting your nutritional supplements where 1 is the most important and 5 is the least important?

- Price \_\_\_\_\_
- Brand \_\_\_\_\_
- Product content \_\_\_\_\_

- Product quality \_\_\_\_\_
  - Professional recommendation \_\_\_\_\_

24) Even though you do not consume any nutritional supplement, rank which which of the following brands you are familiar with where 1 is the most familiar and 8 the least familiar.

- Bioharmony \_\_\_\_\_
- Natrodale \_\_\_\_\_
- Bettaway \_\_\_\_\_
- Vital \_\_\_\_\_
- Musclescience \_\_\_\_\_
- USN \_\_\_\_\_
- SSN \_\_\_\_\_
- Muscletech \_\_\_\_\_

## APPENDIX 3

### Sample Size Table

<http://www.research-advisors.com/tool/samplesize.htm>

This table was used to determine the appropriate sample size for the study. The first column of the table was used (Confidence level = 95%, margin of error =5%).

<b>Required Sample Size<sup>†</sup></b>								
Population Size	Confidence = 95%				Confidence = 99%			
	Margin of Error				Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

<sup>†</sup> Copyright. The Research Advisors (2006). All rights reserved.

## APPENDIX 4

### Editor Letter

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28 May 2012

**TO WHOM IT MAY CONCERN:**

This letter serves to confirm that I have proofread a copy of the following dissertation, and that I have made corrections and comments to the author. The responsibility to accept and/or implement these suggestions remains with the author.

**TITLE:** The Usage Pattern of Nutritional Supplements amongst University of Kwa-Zulu Master of Business Administration (MBA) Students.

**RESEARCHER:** Lizell Bright

The general areas covered in this proofreading include:

- Spelling correction (with special reference to English UK spellings of specific words)
- Correction of grammatical errors
- General editing to improve the language and vocabulary used, and to achieve a more academic tone and style where necessary
- Comments on general layout in terms of consistency in style in lists, figures and tables, headings and chapter headings
- Comments and corrections of the Reference List entries.



Janice Rimbault (Ms)