

# **Price Setting in the South African Coffin Industry**

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## **Abstract**

The aim of this study is to analyze the price setting in the South African coffin industry which is affected by the HIV/AIDS pandemic. Consumer behavior and decision making, producer and retailer response, as well as the overall effects that this industry may have within the realm of the South African economy is analyzed. The central focus however, is the price determination governing the supply and demand relationship, and the influence that this relationship has on the market mechanism, which is important in regulating the functioning of the South Africa coffin industry.

Chapter One introduces the problem statement by highlighting the purpose of the study in light of the effects of HIV/AIDS. The link between the coffin industry and the economy is the increase in mortality rates caused by HIV/AIDS. Sub-Sahara is the worst affected global region, and within South Africa over four million people have been affected by the pandemic.

The effects on the economy can be observed on several fronts for example, the weakening of South Africa's social structure, increasing costs to the state by putting pressure on the limited medical facilities and other social institutions, reducing the skill base, reducing national economic growth rates, etc.

Due to the high levels of unemployment experienced in South Africa, several problems become relevant, especially in rural areas. Such problems can be highlighted in terms of an increase in the financial burden placed on those paying for burials. This is also extended to those organizations supplying financial aid to help cover the costs, such as societies and funeral policies. Due to the low levels of income experienced by many in urban centers, this puts a great deal of pressure on government to assist in the burial of those whom are not in a position to afford the funeral costs. Due to the upward pressure on demand for coffins, prices for coffins may increase, which will be transferred onto the rural population, which characteristically experience a greater degree of low incomes, putting additional financial pressure on these people. The increased rate of burials increase the demand on limited burial space, causing costs to rise, putting additional pressure on household savings. This becomes increasingly important, as the levels of household savings in South Africa are relatively low.

Chapter Two focuses on the theoretical aspects of price determination. Price setting behavior is not only a method of profit maximization, but is also an extension of marketing strategies used to generate and establish a larger share of any target market. This chapter is based on a literary survey and applies a theoretical approach to price determination, analyzing and comparing market structures. Pricing strategies, nominal and real price rigidities and modern pricing methodologies under the influence of Internet and global markets are explored.

Chapter Three takes a close anthropological review of traditional South African cultures and religions, and illustrates how these traditional beliefs and religions influence the decision making of the consumer and the undertaker. Within the context of these cultural perspectives, the issue of cremation as an alternative to the burial is explored. An analysis of the consumer demand is achieved by using the data collected for the consumer and the undertaker surveys. The costs and the consumer decision making regarding burial practices and the financing thereof is highlighted. Burial policies and funeral societies are discussed, and the overall effect that they have on consumer spending patterns, the misallocation of resources as well as the negative tradeoff effects of this misallocation has on the employer, the household, the government and the overall economy.

The financing of funerals is also an important issue as the high rates of unemployment and the huge social demands that it places on consumers are forcing the majority to search for funding from other sectors of the economy that already feels the strain of a global slowdown. Economically, this chapter challenges the traditional customs and the redirection of scarce resources that are been greatly misallocated into inappropriate sectors.

Chapter Four investigates the influence of HIV/AIDS on the economy, and the influence that HIV/AIDS has on the South African coffin industry. This chapter highlights the spread of the HIV/AIDS virus and the influence that this virus has on society. The role woman play in the South African economy, and the effect of HIV/AIDS on the labor force. The discussion then focuses on HIV/AIDS and the workings of the coffin industry and the near perfectly competitive market structure that

functions within the South African coffin industry. Pricing strategies highlighting the role of religion, HIV/AIDS and income are considered and the role of the undertaker in society. The research was predominantly based on the information generated in the undertaker and the consumer surveys as well as a literary survey.

However, the undertaker does not operate independently. There are many related industries, which are discussed, and the relationship between them is highlighted. The growth of the complementary industries, similarly, must not be underestimated, as the coffin industry provides them with a springboard from which they may enter the market.

Chapter Five constructs a model to show how the influence of HIV/AIDS affects the price setting behavior of coffins. Thereafter, the model introduces the concept of competition, showing how the growing rate of competition, in conjunction with HIV/AIDS, is a more suitable model in determining the influence on price setting behavior. The model is based on the Ordinary Least Squared (OLS) method, and the model is tested on economic a priori, Statistical evaluation and econometric tests, for example, Autocorrelation, Heteroscedasticity and Multicollinearity.

Using Theil's Inequality Coefficient, the model is proven sound for forecasting purposes. The combination of HIV/AIDS and competition using the SIC and AIC test proves that this combination is a better-forecast model than if HIV/AIDS was used as a determinant on its own.

In chapter Six, the construction, distribution and analysis of the Consumer and the Undertaker surveys are discussed. For the purpose of the study, it became obvious that within the South African coffin industry, there is a gap between available literature on the industry and what was required for the completion of this research. A detailed discussion on the methodology, purpose, the target sample, limitations and format of the surveys is discussed.

The data collected proved very useful on two fronts: Firstly it provided detailed information that was required in order to complete the study. Secondly, the data collected introduced new questions and opened new doors to further investigation. The

data provided sufficient information to show the relationship between the economy and the coffin industry.

In chapter Seven, the main findings of the study are highlighted by the overwhelming influence of HIV/AIDS which has affected both the nature of the market, as well as price setting behavior. However, it has led to a large degree to the misallocation of resources, that are required in other spheres of the economy. The motivation behind funeral policies is an area of concern, and requires additional research into the social and economic influence of such structures.

The influence of the rapid growth of competition has a large role to play in the coffin industry. Furthermore, the traditional beliefs of the consumer need to be protected and the role of the undertaker in this regard is a major concern. The final chapter highlights areas of further research, makes note of shortcomings in the available literature and highlights the role of policy makers with respect to the South African coffin industry.



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# Chapter 1

## Introduction



## 1.1 Problem Statement

The aim of this study is to explore the price setting behavior of the coffin producer and retailer as well as the decision making of the consumer whom are influenced and stimulated within the market mechanism of the South African coffin industry.

Among the many industries prevalent in South Africa is the growing, yet unexplored coffin industry. Yet, to many, the functioning and behavior of this industry is shroud in a veil of mystery, influenced by the contrasting effects of HIV/AIDS.

HIV/AIDS has taken South Africa by storm. The effect of this pandemic has an influence on all spheres of the economy, from the grand macroeconomic level through to the infinite social, psychological and microeconomic perspectives. On one side of the spectrum, there is concern that the overall state of the nation may deteriorate beyond the scope of immediate repair, simply by corroding at our most important variable, labor. However, on the other hand, there seems to be misconception and denial by the labor force, the very variable that is being corroded.

Clearly, the negative effects that HIV/AIDS has on the overall development and growth of South Africa are a concern to us all. Undoubtedly, evidence can be acquired by observing the loss of potential GDP that, in effect, has being translated via the devastating economic and social factors, on the economy. It is from a microeconomic perspective that one can observe the systematic influence HIV/AIDS has on South Africa, and this microeconomic perspective can be clearly observed in the rapidly growing coffin industry.

The study of the coffin industry has numerous benefits. Firstly, financing the traditional burial is a serious economic burden on the already depleted incomes and savings of many South African's. Secondly, the study may create guidelines as to policy developments to assist in lightening the economic burden of those financing burials. Finally, understanding the market mechanism of the coffin industry may assist relevant businesses to strategize methods of promoting more efficient methods of burial practice that are more socially, economically and environmentally sustainable.



Rules of competition between the numerous undertakers for a share of the market has developed. Factors influencing supply and demand such as coffin materials, import substitutes, cemetery space, social customs and traditions have all contributed towards creating a new identity for price determination in the South African coffin industry.

The main link between the coffin industry in South Africa and the economy is an unexpected and devastating death rate caused by HIV/AIDS. Sub-Saharan Africa has one of the highest incidences of HIV/AIDS in the world, and upward pressure has been placed on the South African coffin industry to meet the new crisis demand.

The virus responsible for the Acquired Immune Deficiency Syndrome (AIDS), is called the Human Immunodeficiency Virus, (HIV). The members of this class of virus have single stranded RNA (Ribonucleic acid), as their genetic material. The genetic material is converted into a DNA (Deoxyribonucleic acid), through a process of Reverse Transcriptase. Reverse Transcriptase is the process of genetic duplication, which functions opposite to that of standard cell duplication. Drugs such as AZT, (3'-azido-2', 3'-dideoxythymidine), can inhibit the process of reverse transcriptase. Unfortunately, AZT, or zidovudine is not a cure, but rather prolongs the life of the AIDS patient, for a year or two. Another negative effect of AZT, is the toxic influence it has on the bone marrow cells. Thus, the patient develops anemia, which also further depresses the immune response of the human body. (Caret, et.al, 1993, pp. 582-583).

Currently, over four million South Africans have contracted the virus, and an estimated 1800 are being infected daily. (Ngubane, 2000, p261). In an article in the F&T weekly, it is reported that HIV/AIDS will cost the economy up to 0.4 percent of lost economic growth, due to lost savings by consumers and producers, brought about by lower consumer spending as a result of breadwinners deaths, increased medical spending in all sectors and a loss of skilled manpower. This should amount to R40 billion by 2015, or a loss of R200 million per working day. (Finance Week, 2000).

In order for us to understand the devastating impact of HIV/AIDS on the population of South Africa, several important figures should be mentioned. Assuming a life expectancy of seven years after infection, it is possible that about sixty thousand adults will have died of HIV/AIDS by 2000, and nearly half a million people will die of

HIV/AIDS in the year 2007. Note, the peak prevalence among men is 25 percent less than that of woman, that is, woman have a far higher chance of contracting the virus. Given that the background adult mortality without HIV/AIDS is 100000 annually, we are just beginning to see the impact of HIV/AIDS adult death rates, the next decade will be devastating. (Williams, et.al. 2000, PP 297-298.).

The distribution of HIV/AIDS is a serious concern for South Africa. Sub Sahara Africa been the worst hit, with an estimated 24.5 million infections. See fig. 1. Within South Africa, the distribution of HIV prevalence seems to concentrate strongest in KwaZulu Natal. See fig 2.

| <b>People Living With HIV</b> | <b>1999 Figures</b> |
|-------------------------------|---------------------|
| Sub Sahara Africa             | <b>24500000</b>     |
| South & South East Asia       | <b>5600000</b>      |
| Latin America                 | <b>1300000</b>      |
| North America                 | <b>900000</b>       |
| East Asia and Pacific         | <b>530000</b>       |
| Eastern and Central Europe    | <b>420000</b>       |
| Caribbean                     | <b>360000</b>       |
| North and mid-East Africa     | <b>220000</b>       |
| Australia and New Zealand     | <b>15000</b>        |

**Table 1.1. HIV/AIDS epidemic, a global picture. Report from the UN.**

Source: The Star, Thursday June 29 2000. Brown, D. p. 25

In the 1990's, HIV/AIDS for most developing countries was negligible, having an insignificant effect on the growth rate per capita income with no evidence of reverse causality from growth due to HIV/AIDS. This comes about where HIV/AIDS undermines the main determinants of growth, which in turn facilitates the spread of HIV/AIDS, further reducing growth. On the other hand, now we are experiencing a development crisis. In Africa, HIV/AIDS related diseases are the highest cause of motility. HIV/AIDS impact on development is due to its ability to undermine three determinants of economic growth, namely, human, physical and social capital. (Bonnell, 2000, pp. 821-822, 831).

| Province in South Africa. | Prevalence percent |
|---------------------------|--------------------|
| KwaZulu Natal             | 33                 |
| Mpumalanga                | 26                 |
| Free State                | 26                 |
| Gauteng                   | 24                 |
| North West                | 24                 |
| Eastern Cape              | 17                 |
| Northern Province         | 12                 |
| Northern Cape             | 10                 |
| Western Cape              | 8                  |

**Table 1.2 Prevalence of HIV infection among woman attending anti-natal clinics in South Africa.**

Source: South African Journal of Science. June 2000. p. 298.

According to Bonnel, the following factors explain why HIV/AIDS affects economic and social development to such an extent:

- The speed and scale of the epidemic has been much worse than projected. This has lead companies to restructure their production and marketing systems and policies in order to remain competitive. For example, by mechanizing their production process. Some companies have begun offshore operations to find greener pastures where the overall negative toll on employees and customers is lesser. This adds to systematically reducing foreign direct investment by companies not willing to be tied down by the burden of the epidemic. This ties up with the next point, namely:
- HIV/AIDS reduces the stock of human capital, reducing incentives to invest in additional labor, through either retraining, skill development, education etc. This is increasingly compounded by the need to mechanize the production process, contributing towards further unemployment, and overall poverty.
- HIV/AIDS tears away at social institutions. On a national level, HIV/AIDS undermines government to provide basic social services. The high burden imposed

on the state through increasing pressure on the medical system, both private and public, such as medical aid schemes, public hospitals and prisons, etc., becomes more obvious. HIV/AIDS reduces the efficiency of production, lowering output of labor, which ties up with the previous point, forcing large parts of industry to change their production mechanisms in order to remain competitive. (Bonnell, 2000, pp. 822-823). Much of the funding utilized in the combating of the virus, would otherwise, if HIV/AIDS had not existed, been used to improve education facilities, combating poverty and unemployment, leading people towards been more economically competent, and thus generating faster and more sustained economic growth.

- HIV/AIDS within the social structure leads towards denial or social stigmatism. Much of the national social structure is torn apart through basic misconceptions, causing families to break down or communities to tear apart, resulting in social degradation and economic stagnation. An example here is the development of large orphanages to accommodate the high number of children whose parents have died or simply have been unable to support them due to the epidemic. The question arises as to whether the existing orphanages are capable of accommodating, let alone supporting this growing demand imposed upon them by this ever increasing number of children that are sent to their care by the state.

Macroeconomic policy is severely eroded by the effects of HIV/AIDS. Bonnell highlights this issue by stating that HIV/AIDS reduces the capacity of governments to implement efficient economic management and adversely affects the enabling environment, which is important for private sector development. (Bonnell, 2000, p. 830). As an example the loss of tax revenue, or disproportionate spending by the government within the sectors affected by prevalence of HIV/AIDS, may lead to inefficient allocation and utilization of government resources.

According to the Human Development Report, 90 percent of all infections are in developing countries, yet in North America and Europe HIV/AIDS is currently the leading cause of deaths for those under the age of 45. Again, the personal tragedy incurred on families and on social structures is of major concern. A large degree of social stigmatism such as inhumane and discriminatory treatment attached to the

disease through lack of understanding is common place. (Human Development Report, 1996, p. 22).

In a study conducted by the Harvard Institute for International Development and Columbia University from 1980 to 1992, using a sample of 52 countries, it was found that an average of 1.3 years of human development progress was lost across the spectrum of developing nations. For example, Zambia lost a cumulative 10 years, while Tanzania lost 8 years and Rwanda lost 7 years. The main reason for the effect of HIV/AIDS on human development is due to the HIV/AIDS related deaths falling in the age groups between 20 and 45 years. (Bloom et.al. 1996, p. 22).

Within the context of South Africa, this is clearly a matter of concern, as the majority of the sufferers of HIV/AIDS also fall into this category. , Which unfortunately, is the most economically productive age group. The South Africa economy will lose a great deal of potential growth over the next few years. Clearly, the unskilled sector will be the hardest hit by the epidemic. The implications will manifest itself in higher recruitment and training cost, probably pushing the industry towards greater levels of mechanization.

As the process of mechanization increases, so fewer jobs are created. Simultaneously, the effect of HIV/AIDS on savings is negative, allowing fewer people enough income to survive periods of higher unemployment. Wage earners are being forced to care for more individuals in extended families. South Africa is according to Natrass, currently standing at 38 percent unemployment, including discouraged and active work-seekers defined as unemployed. (Natrass et.al. 2000). This places upward pressure on the poverty burden, which further corrodes the economy as a whole.

Within the context of HIV/AIDS, unemployment, poverty, etc. that South Africans face, there is a rapidly developing industry on the block, one that is confined by social customs and traditions, yet wary of the lack of available income and resources, namely, the coffin industry.

## 1.2 Aim and Relevance of the Study

The issues of HIV/AIDS ties up with the Aim and Relevance of this study, namely the price determination within the coffin industry in the light of a dismal epidemic, that bears resemblance to the characteristics of the black death of Europe, with the dissipation of its economically active population, both rural and urban.

The coffin is not a stand-alone product, and as previously discussed, is surrounded by a sea of complementary and substitute products. The coordinators of this system are the undertakers, which direct customer choice, by providing options to match with their tastes and preferences, social and cultural customs and their financial situations. It is in my opinion that the region be split in half, namely, rural and urban. It is the urban environment where undertakers and financial schemes determine price, while in rural areas, natural market forces of supply and demand play a more dominant role.

What has made this topic an interesting case study, is the rapid speed in development of the coffin industry. Currently the death rate in South Africa stands at 100000 per annum. With the advent of HIV/AIDS pandemic, the death rate is expected to increase to 600000 per annum within the next few years. With these figures alone, there is in itself evidence of the dynamic market forces that are developing at a rapid rate within the coffin industry.

The coffin is truly a very western approach to the burial, and until the 15<sup>th</sup> century that was not made available to the middle or lower sects of society. One of the examples of a coffin was found in Norfolk, England, (not to be confused with a sarcophagus, the kind associated with burial tradition in ancient Egypt), and dated back to the 14<sup>th</sup> century. Until then, the body was usually placed in a shroud, similar to many of the African Cultures, where a blanket or cows skin was used instead. (Wilde, 2000, p. 12)

From the 15<sup>th</sup> to the 16<sup>th</sup> century, a reusable parish coffin was used to convey the body from the church to the grave, but this discontinued use in the 17<sup>th</sup> century, due to the influence of diseases such as the plague. By the 18<sup>th</sup> century, the use of the shroud was virtually extinct and the coffin had become wholesale. Many versions of the now traditional coffins were created, including those coated in lead and completely

environmentally sealed. After the 1870's, wax and polished coffins became standard, and carried on until today's use of Veneered chipboard and MDF shells which comprise 90 percent of units consumed for burial and cremation. (Wilde, 2000, p. 12)

According to the South African Bureau of Standards, given in SABS 065, a coffin is defined as a chest with perpendicular sides and ends, broadest at the shoulder, tapering towards the end, in which a corpse is buried or cremated. A casket is similar in definition, except for the shape, namely that the sides are perpendicular. (CKS, 1993, p 3)

There is no particular difference between the two except for personal taste. Much of the standards set down by the SABS, is not enforceable, but is rather considered as recommendations along guidelines which manufacturers and undertakers are expected to abide by. Notably coffin prices range from R430, for a pressboard coffin often referred to as a pauper box to thousands of Rands for a designer coffin. These are supplied by the undertaker when the state becomes responsible for the burial of an unclaimed body.

According to AVBOB, an in-house producer and supplier of coffins, prices range upwards, from R1500 for a specialized Jewish coffin, used for orthodox Jewish burials and is made of pine and very simple in construction. Coffins and caskets climb in price and quality by thousands of Rands in an available range. Many of the boxes in the upper price range are imported, and many offer a guarantee that the body will be preserved for over thirty years, or more, contingent on the price paid.

The preference, taste and income of the consumer control the supply of these coffins. Variety and style are provided along a wide and dynamic spectrum of choice. Regional segmentation, specifically between the rural and the urban areas, leans towards greater differences in demand. Naturally, price has a lot to do with product demand in rural areas because of the existence of lower incomes and the extent of poverty that exists within the social fabric. In the urban context, where incomes are higher, there is greater demand for more expensive coffins, of the type discussed earlier. It seems that demand is largely driven in urban centers by quality and social stigmatism, as opposed to rural areas, where the main determinant of demand is price.

This is where the reality of HIV/AIDS pandemic and coffin prices will collide. Within urban areas such as Johannesburg or Durban, HIV/AIDS infections lie between 150 and 300 per square kilometer. In rural and semi-urban areas, there are considerably fewer incidents of HIV/AIDS affections per square kilometer. (Williams et.al. 2000, p 298).

This poses a serious problem for those people who will be affected in urban areas.

- There will be a heavy financial strain on savings by those who are assisting to pay for burial fees.
- This will also put a burden on those who are supplying financial aid, as more people claim from their insurance, either funeral, health or life cover.
- In some cases, there are a great deal of people facing unemployment in the urban centers who will be unable to finance burial fees. This puts more pressure on government to finance the local undertakers via pauper burials of unclaimed bodies.
- This in turn will increase the cost of available coffins, putting even greater pressure on household saving.
- The effect will be transmitted to the rural areas, where the local people will not be able to afford the higher price coffins.
- The large number of coffins required in urban centers will put pressure on available natural resources such as wood and cemetery space. This may force both the government and private sectors to develop coffins that are both ecologically friendly and are more biodegradable.
- This ties up with the drastically increasing pressure on available cemetery space and the rapidly overcrowding of current cemeteries, together with the high upkeep costs for long-term gravesites and facilitates the development of privately owned cemeteries and gardens of remembrance.
- This in turn will increase the cost of burials, placing greater pressure on household savings.

Alternative products will force into the market. This may lead to downward pressure on prices, forcing many of the current small manufactures to close down, further contributing towards unemployment and poverty.

There seems to be much speculation about the future growth, development dynamics and trade within the coffin industry. The need for immediate substitute products,



especially products that are economically and environmentally sustainable, within a nation suffering from the ramifications of a weakened social structure and the negative perceptions within the economy.

Greater levels of research are justified, when one considers the global effects of HIV/AIDS. This implies that not only research that will benefit South Africa due to the uniqueness of the situation, but also other nations who may experience similar problems in the near future. One theory that is currently relevant, is the “life Cycle for New Products”. This theory created by Raymond Vernon, which is based on the Linder hypothesis. (Markusen, 1995, pp 207-208). This theory suggests that a product undergoes three stages of growth, namely:

The innovative stage. During this phase new products are developed. In the case of South Africa and Europe, there is the development of a new coffin product in, for example Europe, forced upon the Europeans by the high cost of natural resources and the large degree of environmental pressure brought about by the marginal increase of deaths due to HIV/AIDS. These products are traded between other highly developed nations, for example, between Switzerland and Germany, but on a low scale, at a reasonably high price. Examples of these manufactured goods are the Fiberboard or recycled paper coffins or coffins made of organic materials such as straw.

The maturing stage. The increasing demand and stable production in the higher income countries and middle income countries has led to an increase in production in those countries. Prices are lower due to lower transport costs and the use of local materials. During this stage the product is been substantially developed and improved. In this regard, South Africa has probably produced a more environmentally secure coffin (forced about by government intervention in dealing with the situation), at a lower price than its European counterpart.

The Standardization stage. In this stage, the production has become more stable and more labor intensive. The coffin is now exported back to the European countries far cheaper than the original products that where imported earlier. This becomes more important as HIV/AIDS begins to dominate the Northern Hemisphere, causing upward pressure on the demand for coffins too. New branches of trade subsequently in the southern hemisphere develop with other African countries predominately on the South

Africa boarder, who too benefit from the advantages of this cheaper and improved product. Later, countries like Botswana, Zambia and Mozambique may repeat the cycle with South Africa. This intern, within the context of the SADC trade block may be beneficial to us all, adding value to our growth and reshaping the coffin industry.

The process by which price and output are determined in the real world is strongly affected by the structure of the market. A market by definition consists of all the actual and potential buyers and sellers of a particular product. The market structure is then the competitive environment in which the potential buyers and sellers of the product operate. This includes the number of suppliers, the ease of entry and exit, and the extent of market differentiation, assuming a market economy. (Salvatore, 1998, 365).

Four general types of market structure can be identified, namely, perfect competition, pure monopolies, oligopolies and monopolistic competition. These market structures are differentiated in terms of number of buyers and sellers, product homogeneity, resource mobility and market density, i.e., the knowledge that the economic agents have of the relative prices, costs, demand and supply. (Salvatore, 1998, 365).

Perfect competition virtually does not exist in reality and refers to a market structure in which there are many buyers and sellers of a homogenous product, there are no barriers to entry, or exit, and no individuals can influence the price. An example could include the stock market, which comes closest to perfect competition. However, most businesses within a market economy only come near to perfect competition. Moreover, are not considered absolute perfect competitors.

Pure monopoly. The sole supplier of a good or service. Such as AFROX, a company in South Africa which supplies most gas welding material. Other gas welding companies have attempted to enter the market, however the process is slow and difficult.

Oligopoly. A market structure characterized by the interdependence of firms. Companies that exhibit such characteristics include Vodacom and MTN, (Both companies are cell phone service providers.). Companies entering the market may find it very difficult to become competitive, and entry and exit into the market is very expensive. An example can include Cell C, a rival company, whose entrance into the market was supported by government, and proved time consuming.

Monopolistic competition. A market in which there is a large number of suppliers and entry and exit is possible only in the long run. An example here could be the South African tobacco industry or South Africa Breweries. (Harrison et.al. 1992, pp. 390-392).

Within the market structure, once a market structure is identified, pricing techniques will form an integral part of this discussion. Importantly, issues such as cost plus pricing, incremental pricing, two-part tariffs, bundling, tying, skimming, price lining, value pricing and other modern techniques of pricing practice will be dealt with in detail in the next chapter.

Within the context of a very diverse South Africa culture, is a very wide span of cultural traditions and values. These cultural norms to embrace traditional social, religious and ceremonial issues. One important issue regarding death and burial is that of appeasing the ancestors, as it is the profound belief of many traditional cultures that life extends beyond death into the spiritual realm. Thus, an issue of burial sites, coffins and cremation becomes a focal point of this discussion.

Along these grounds, the financing of burial practices becomes a relevant focal point, and a discussion on the basic premise of burial schemes, funeral societies, funeral policies and insurance need to be looked at. Similarly, tastes, preferences and cultural demands need to be explored in context of the South African burial scene.

The relevance of this study is unique, in that not very much research has been done on this industry in the past. The idea of creating a functional model for the purpose of price determination is becoming a necessity in light of the ever-increasing effects of HIV/AIDS. Furthermore, the purpose of studying a rapidly developing industry, within the heart of a dualistic economy, may prove beneficial in understanding the workings within many of the developing nations, especially those facing very similar circumstances.

### **1.3 Method of Research**

The aim of chapter two is to discuss the theory of price setting behavior and market structure. These are important in analyzing the microeconomic pricing structure of the South African coffin industry. The method of research is intended to be based on a literature survey of recent economic literature associated with price setting techniques used by modern companies.

The aim of chapter three is to discuss some traditional social, economic and religious aspects of a selection of traditional South African cultures, within the constraints of burial practices in South Africa. This is used to highlight the consumer demand and producer/retailer supply and the financial transmission mechanism that is responsible for the socioeconomic decision making exercised by these traditional societies. The method of research used in this chapter is based on both a literature survey and the findings of a consumer and an undertaker survey that I delivered to the market in order to establish the relevant information that was unavailable in literature sources.

The aim of chapter four is to analyze and discuss the economic impact that HIV/AIDS has had on South Africa and the general influence that this has had on the South African coffin industry. South Africa's importance in this chapter should not be underestimated, as the effects of HIV/AIDS on the South African coffin industry can be considered as a platform from which other countries may create policies or set benchmarks in dealing with a similar situation. This chapter will then proceed to discuss the South African coffin industry in detail, the level of competition, the market structure of the coffin industry, and the relationship between the consumer and the producer and undertaker. The method of research is based on information collected from surveys that were presented to both the consumers and the undertakers and coffin producers as well as a literature survey.

The aim of chapter five is to analyze the relationship between certain variables in the market economy with the use of an econometric model that may be relevant to the price setting behavior experienced within certain sectors of the South African coffin industry.

Specifically I would like to show how the influence of HIV/AIDS influences coffin prices, and then build in a proxy into the model in order to illustrate the influence of competition in the market and the effect it has on coffin prices. The method of research is based on information collected from the survey that was presented to the undertakers and coffin producers as well as a literature survey.

The aim of chapter six is to discuss and analyze the research surveys that were constructed for the purpose of collecting relevant information from the South African consumer, as well as the South African coffin retailer and coffin producer. The chapter intends to show the methodology used to construct the surveys, as well as an analysis of the shortcomings of the survey, combined with an analysis of the coverage, purpose and expectations of the survey.

The aim of chapter seven is to discuss the overall conclusions and findings of the study. It also defines and discusses any recommendations, areas of further research, the role of policy makers and the role of the undertaker within the coffin industry.

The significance of this dissertation is that it highlights the effects of a pandemic on the economy of South Africa. The study of the South African coffin industry will allow us to get a glimpse from a microeconomic perspective of a rapidly developing industry. The study will involve analyzing and interpreting the market forces that play a role in price determination within this industry.

The aim of this study will not only be the effects that HIV/AIDS has on the economy, but a combination of traditional factors, sociological interests and international influences on the coffin industry in South Africa. Clearly, the usual market mechanisms that have functioned in the past are not relevant to the functioning of this highly competitive industry today. It will be interesting to determine the mechanism that drives this industry under the dominant influence of HIV/AIDS.

# **Chapter 2**

## **Theoretical Aspects of Price Determination**



## **2.1 Introduction**

The aim of this chapter is to capture the theory behind price setting behavior on a microeconomic perspective. Naturally, there is a thin line between defining marketing strategy and the pricing decision practice of firms today. In most cases, the marketing management will not make a decision on one issue without the knowledge and the intent of the other. Volumes have been written on both the theories of pricing and marketing strategies. For the purpose of this chapter, I intend to highlight the most relevant issues of pricing, which are important in later analyzing the microeconomic pricing structure of the coffin industry.

What is important in this theoretical approach to price determination, is to define the basic structure of the market, discussing both perfect and imperfect competition. Market types, market efficiencies and market functioning shall be defined and discussed. Pricing strategy within a target market, is an issue of concern for both producers and consumers. Highlighting the role of monopolistic, oligopolistic or perfect competitors, consumer decision making is strongly affected by the pricing setting behavior of firms in a highly competitive economic environment.

## **2.2 Price Determination, a Theoretical Perspective**

### **2.2.1 Theory of Perfect and Imperfect Competition**

In order to understand pricing decision behavior, a basic analysis of the market structure needs to be examined. There are four common market structures that we shall examine, namely, purely competitive markets, monopolies, monopolistic competition, and oligopolies.

A perfectly competitive market is one in which firms are price takers. It is characterized by many buyers and sellers, none of whom represents a large part of the market. They have very little influence on the amount they receive for their product. Alternatively, when an industry is in a position to influence the price of its product, then imperfect competition exists. Imperfect competition is characteristic of industries in which there

are only a few producers, or where a product is seen by the consumer as being strongly differentiated by the consumer. For example, the commercial airline industry in which there are only a few producers, for example Boeing, Airbus Industries, McDonald Douglas or producers of luxury motor cars such as Mercedes Benz, Volvo, Audi and BMW. Imperfect competitors are price setters; that is, they dictate to the market the price of their goods. (Krugman, et.al., 1997, p124)

With the mobility of factors such as resources and labor, and flexibility of prices, economic profits are soon eliminated, and income differences among the entrepreneurs depend upon efficiency and variation. Production is geared to consumer preferences as they exist. This is a very important point as, when consumer spending pattern change, it is important that the entrepreneur is flexible enough to adapt to the new patterns of demand, otherwise he will loose to the competition. This may lead many firms to having very short business horizons and limited availability of resources. Another point, which must be discussed under purely competitive competition, is the lack of consideration of the social and environmental costs, such as pollution factors and not using recycled material in the production process. Many small firms do not include these social implications in the costing of their product, as this will lead to higher prices, forcing the price competitive advantage away from the small company, and resulting in loss of business or profit. (Grayson, 1965, p. 117)

In practice, and very relevant to the theory of pricing practice which ties up with trade is an Important relevant definition often referred to as “economies of scale”. Many production industries are characterized by economies of scale. The term economies of scale, refers to an industries ability to be able to more than double its output when doubling its inputs. This means that an industry becomes more efficient as production increases. Economies of scale can be broken down into external and internal economies of scale.

External economies of scale occur when the cost per unit produced is dependent on the size of the industry but not on the size of any one firm. For example, in the electronics industry in Silicon Valley, where the manufactured components of computers are being produced, are kept relatively low due to the near perfect competition within the local industry. Internal economies of scale occur when the cost per unit depends on the size



of an individual firm, but not on the size of the industry. For example, AFROX welding giant in South Africa tends to dictate prices for welding accessories, leading towards imperfect competition in the South African welding industry. (Krugman, et.al. 1997, pp 122-124)

A purely competitive system is subject to a large degree of instability. Unless more aggressive and capable entrepreneurs are subjected to restraints such as custom, tradition or regulation, heterogeneous management inevitably brings about technological advances in methods of production in the form and nature of new products. Such change and development through product differentiation is the aim of profit maximization. This may lead to further the development of new industries, which can, in many cases be a temporary phenomenon, as many of the new industries are absorbed into larger firms through vertical or horizontal integration. Thus, the newly formed purely competitive industry, eventually fades out, and is replaced by monopolistic competition. (Greyson, 1976, p 119)

## **2.3 Imperfect Competition**



### **2.3.1 Monopolies**

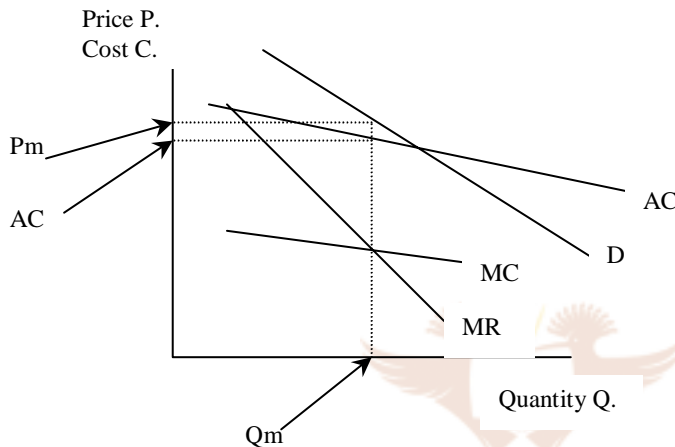
Four basic reasons can give rise to the formation of a monopoly.

- Firstly, a firm can gain control of most raw materials required for a certain production. For example, De Beers, a giant organization controls the South African diamond industry, by laying claim to most of the diamond fields in Southern Africa and exercising “rights” to auctioning and price setting internationally.
- Secondly, the use of a patent or copyright, which prevents any other company from producing or copying a product or process. For example, the pharmaceutical industry, and their claim to the HIV/AIDS anti-retroviral drugs, may thus market their product at a higher profit than would otherwise be possible.
- Thirdly, in some economies, companies exhibiting economies of scale over a large range of outputs, leaving only a few suppliers to supply a limited range of products to the entire market. SAB can be cited in this example, of a company who supplies a large variety of brewed products such as beer, to the majority of the market, not

allowing competitors to enter by buying up small breweries locally or undermining the competitive advantage of potential competitors by undercutting the competitors price.

- Fourth, a government franchise, whereby a firm is set up as the sole supplier of a product, and thus inherits a monopoly market. For example, ESCOM is sole supplier of electricity in South Africa, Spoornet, the largest railway network in Africa, and Telkom telecommunication, for example, is another example in this category.

(Salvatore, 1998, pp. 382-383)



**Figure 2.1 Mechanization of a Monopoly**

Source Krugman et.al. 1997, p 125

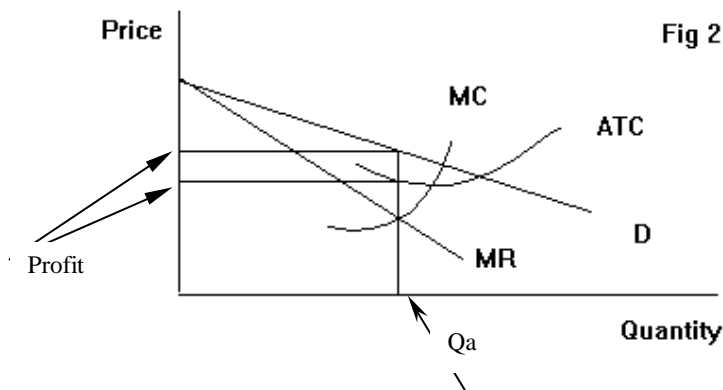
The mechanics of a monopoly is described in Figure 2.1 That is, a monopoly chooses a quantity output where the marginal revenue equals marginal cost at quantity  $Q_m$ . The price at which output is demanded, is indicated at  $P_m$  on the vertical axis. The profits are usually the difference between the average cost,  $AC$ , and price  $P_m$ .

### 2.3.2 Monopolistic Competition

Monopolistic Competition is the form of market structure, in which there are many sellers of a heterogeneous or differentiated product, that is the product is similar, and fulfills similar needs and functions, but is not identical. For example, the large number

of coffin producers in the South African coffin industry offer a wide range of product choice, yet the basic product fulfills the same needs.

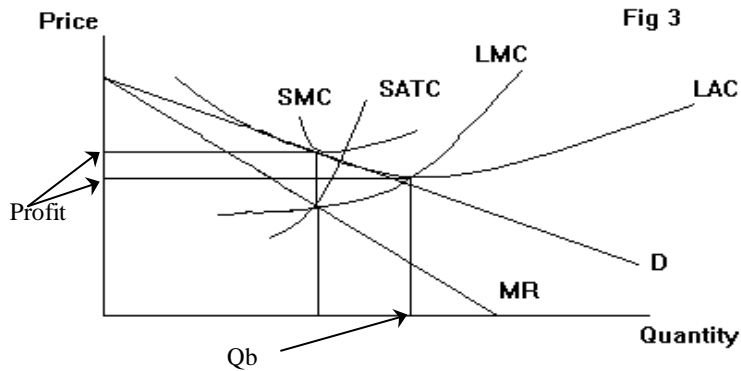
In the long run, entry and exit from the market is relatively easy. Because of the large number of substitutes available to consumers, this limits the market share of the monopolistic competitor. Prices are highly elastic, and even moderate upward adjustments to the price of the product could negatively affect sales. Under monopolistic competition, a firm can increase its expenditures on product variation and selling effort in order to increase the demand for its product, by appealing to the different tastes and expectations of its customers. Thus, it is possible for monopolistic competitors to make their products more price inelastic. See Figure 2.2 The best level of output of the monopolistic competitor in the short run is where  $MR=MC$  at  $Q_a$ . Profit is the distance between  $MC$  and  $ATC$  (average total cost).



**Figure 2.2 Short Run Price and Output Determination under Monopolistic Competition.**

(Source: Salvatore, 1997, p394)

The best level of output of the monopolistically competitive firm in the long run, see figure 2.3, is given where  $MR = LMC$  (long term marginal cost) =  $SMC$  (short term marginal cost). The best price achieved in the long run is where  $LAC$  (long term average cost) =  $SATC$  (short-term average total cost). The best level of output is at  $Q_b$  where the  $MR = LMC$  and  $P = LAC$ . (Salvatore, 1997, p394)



**Figure 2.3 Long Run Price and Output Determination under Monopolistic Competition.**

*(Source: Salvatore, 1997, p394)*

Under monopolistic competition a firm can increase its expenditure on product variation and selling effort in order to increase the demand for its product by making it more price inelastic. Product variation is the adaptation or modification of the characteristics of the product in order to make it more appealing to the customer. For example, tokens found in chip packets, or sugar free chewing gum, toys for children at McDonalds for every burger purchased, etc. Selling expenses, on the other hand refer to all the costs associated with marketing the product. A monopolistic firm can spend more on variation and selling effort as long as the MR from these efforts exceeds the MC, and until  $MR = MC$ . (Salvatore, 1997, pp. 395-396)

### 2.3.3 Oligopolies

One of the most prevalent forms of market structures in industrial nations is the oligopoly. For example, the tobacco industry, or motor car industry, such as Ford or Chrysler. An oligopoly is the form of market structure in which there are few sellers of an homogenous or differentiated product. A duopoly is defined as a market structure with only two sellers of a certain product. In the case where product is homogeneous, we have a pure oligopoly. If the product is differentiated, we have a differentiated oligopoly. Entry and exit into the market is possible, but not easy. (Salvatore et.al. 1997, p408)

A common characteristic of the oligopolistic market structure is often the limited availability of transport; thus, a product is limited to a certain area, due to high transport costs or severe logistic criteria. A distinguishing characteristic of an oligopoly is the interdependence of rivalry among firms in the industry. In many cases, price competition may lead to price wars, therefore many oligopolistic companies may prefer to compete using non-price competition such as the use of product differentiation, advertising and service criteria. (Salvatore et.al. 1997, pp 408-409)

Sources of oligopolies and barriers to prevent new firms from entering the market, which are similar to that of a monopoly, are namely:

- Economies of scale may operate over a large range of output, leaving only a few firms to supply the entire market. For example Vodacom, MTN and Cell C, two of South Africa's only cell phone service companies.
- Huge capital investments and specialized skill and equipment are required to enter the market, such as M-Net and DSTV, two entertainment companies.
- Patent rights and copyrights, such as Coca-Cola.
- Established companies may have loyal customers, based on excellent service.
- Control of raw materials, so that other companies do not achieve a large market share. For example, De Beers (produce diamonds and the price is artificially supported) and Sappi for paper.
- Government franchising to several specialized firms in the market.

(Salvatore et.al. 1997, p409).

A final barrier to prevent other firms from entering the market is limit pricing, where prices are so low it prevents other firms from being able to establish themselves. This way, oligopoly firms sacrifice short term profits to maximize long run profits. (Salvatore et.al. 1997, p409).

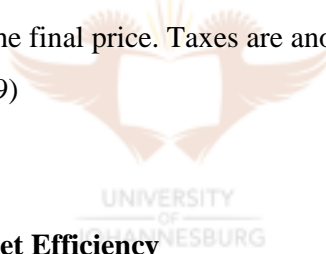
## **2.4 The Market**

A market by definition is considered any arrangement that brings buyers and sellers into contact. A market is said to be perfect if, at any moment, there is a single price known to all participants in which transactions are executed without fee or penalty. The

three characteristics of perfect markets are perfect communication, instantaneous equilibrium and costless transaction.

- **Perfect Communication:** The market must be an integrated whole, not segmented by limitations of information. Real world markets are beset with information imperfections. Efforts to overcome these include advertising, specialist occupations such as estate agents and equity brokers in an attempt to bring all relevant players into a single combined market place.
- **Instantaneous equilibrium:** A market can be viewed as a mechanism, integrating all supply and demand functions, to yield as output the equilibrium or market clearing price at which purchases and sales are executed. Unfortunately, this too does not exist in the real world. In reality, trading at false prices is often the norm. Thus the role of speculators who sell when the price is too high, or buy when the price is too low so as to smooth out this negative effect.
- **Costless transactions:** Markets that are perfect would be costless. In the real world, market middlemen exist, such as retailers, brokers, dealers and wholesalers exist which add their profit to the final price. Taxes are another important factor here.

(Hirshleifer, 1984, pp 418-419)



## **2.5 The Economy and Market Efficiency**

One of the main tasks of the economy is highlighted by the efficiently running market, which means that no resource or any other commodity should be used in any way if there is another use for it of greater social value. The principle is divided into three parts, namely efficiency in distribution, efficiency in production and consumers sovereignty.

- **Efficiency in distribution** means that the goods produced in the economy should be distributed to the consumers who want them. It should distribute its output among consumers in such a way that no consumers could benefit from the allocation that did not harm any others. For example, the provision of basic foodstuff during a natural disaster such as the Mozambique floods recently could be cited here. This would be a clear indication of an economy disrupted and not working efficiently. An economy will normally achieve efficient distribution by charging all the

consumers the same price; thus, the marginal rate of substitution between every pair of commodities is the same as that of every other consumer. Unfortunately, many of the pricing strategies today look at market segmentation as a method of drawing higher prices. Globally, dumping could also fall into this category.

- Efficiency of production means that, as much should be produced of every good that the available resources and technological knowledge will permit. It should produce as much of every commodity without reducing the output of other commodities. For example, many of the former east block states, in the 1960's and 1970's, such as East Germany or Yugoslavia, often showed signs of production inefficiencies. A market mechanism achieves efficient production by charging all firms the same prices for the productive factors used. This will ensure that an output bundle will remain on the highest possible production possibility curve, providing a higher level of customer utility.
- Consumer sovereignty means that the goods produced should be the goods demanded. It should produce a bundle of commodities so that no other bundle of commodities is preferable by every consumer. For example, Henry Ford produced every car in black, despite what color the consumer actually desired. In the recent communist block before the collapse of the Berlin wall, consumer choice was severely limited due to political domination and control, showing signs of a poorly functioning economy. By permitting natural supply and demand factors until supply equals demand for all commodities, ensures consumer sovereignty. Under these circumstances, consumer's marginal rate of substitution between any pair of substitutes is equal to consumer's marginal rate of transformation between them.

(Dorfman, 1967, pp. 114-135)

## **2.6 Prices and Market Clearing**

In an attempt to define the role of price, Gabor mentions that, "Price" is only one of the elements of the marketing mix, which determine the success or failure of a product. In any actual marketing situation price exerts its influence in combination with other factors, including the intensity of the of the competition as it manifests itself in the attitude and behavior of the customer. (Gabor, 1988, p3).

Price is a significant factor in consumer decision making, including decisions of product assortment, product quality and product assessment. Reference price, which is different from retail price, represents the consumers estimate of a fair price for that product. Reference price can be used with greater accuracy than the retail price in determining a consumers evaluations and purchases. This is the price that consumers are either willing or unwilling to pay for a specific product. (Monger et.al., 1997, p. 1).

There are two types of markets that affect pricing structure. The first is the auction market characterized by a large degree of product homogeneity, such as, stock markets and fresh produce markets. The other is the customer market, characterized by price tags and customer choice and mobility.

Within the auction markets, there are three types of participants, namely, producers, users plus retailers and traders. Sellers are price takers instead of price makers. Much of the goods traded are bulk stored, and thus storage tends to be relatively inexpensive. Another characteristic is the supply of goods to these markets are seasonally based such as the fresh produce industry and commodities.

Customer markets are very different from auction markets in that customer markets have associated price tags with the goods sold. Sellers are price makers and the customer becomes the price taker. As long as there are costs associated with shopping and limited information in finding the lowest price in the market place is available, most players adopt a strategy analogous to the acceptance wage of a searcher in the labor market who is in a position to settle for some price at which the additional cost of more shopping outweighs its benefits. (Okun, 1981, pp 134-139) The critical characteristic of a customer market is translated into the low frequency of search relative to the frequency of purchase. (Snowdon, et.al., 1994, p. 304)

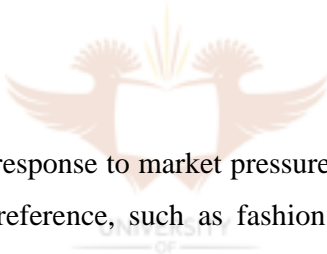
The market-clearing price is generally referred to as the position where the demand and supply graphs intersect. That is, the points where the goods demand and supply are in equilibrium. At this price the market is in balance, unless a form of stimulation may cause the demand and the supply curves to move, however, there will be no change in price.



### **2.7.1 Fix-Price Markets**

In the case of fix-price markets, the quantity demanded is less than the quantity that sellers are willing to supply. The immediate market reaction will be very sluggish and there will be a large period of dis-equilibrium within the market. Most of the goods not sold will be moved into storage and this may prove to be very expensive. A chain effect may arise, as retailers' stop orders of wholesalers, who in turn block orders of manufacturers, who then either change the line of production or cut back on staff to avoid large overheads generated. (Bain, et.al., 1988, pp 16-17). For example, clothing which is directly linked to a particular fashion may affect a market in this manner. The adjustment of quantity by moving the supply curve to establish a new equilibrium and not the adjustment of price is thus also known as quantity adjusting market.

### **2.7.2 Flex-Price Markets**



Sometimes, prices change in response to market pressure. Due to high storage costs, or even changes of customer preference, such as fashion driven tastes in the clothing industry, prices may be reduced to dump the excess stock. For example, the season end sales of companies like Woolworth's, Edgar's, etc. to discount and dispose of the surplus stock. In this case, the supply and demand meets at an equilibrium price known as a price adjusting market. (Bain, et.al., 1988, pp 18-19).

### **2.7.3 Instantaneous Market Clearing**

In the case of both the flex price and fix price markets, the adjustment to equilibrium takes some time. In this case, when a market is not in equilibrium, the price will change immediately so that we move without any delay to a new equilibrium price. (Bain, et.al., 1988, p19). An example of this is found in the equities or bond markets, where information is rapid due to the highly sophisticated IT networks which link the global markets.

#### **2.7.4 Pricing Strategies**

Price change is an ever-occurring phenomenon. Most often however, price change is unplanned, unmanaged, and uncomfortable for both the consumer and the producer. Price management refers specifically to the control of pricing, either of new products, or of the prices of products under the influence of new technologies and systems. Price management also incorporates price factors for quality leadership, process management and controlling change within the market. Price factors may include modifying the product design and improved product development and stimulating production processes. Strategic pricing management is the systematic setting of a uniform pricing policy for new product families, and resetting prices for a revision type product change. (Prasad, 1997, p 8).

In order to manage change within the market, market-pricing strategies are required. Modern pricing strategies include two-part tariff, tying, bundling, prestige pricing, price lining, skimming and value pricing. Many of these modern pricing methods have being facilitated by the Internet and modern shop floor techniques such as the use of electronic scanners and bar coding. These techniques are responsible for assisting in reducing menu costs and time associated with pricing practices and pricing decision behavior.

#### **2.7.5 The two-part Tariff**

This method of pricing has being often associated with oligopolistic and monopolistic firms in order to improve there profit maximization. Two-Part Tariff refers to the pricing practice in which consumers pay an initial fee for the right to purchase a product or service, as well as a usage fee or price for the use of the product they purchase. (Salvatore, 1998, pp. 484-485). For example, Telkom, South Africa's monopolistic telephone company, charge both a rental fee for the use of a "line", as well as a separate charge for the individual units of telephone calls made, charged usually per minute.

### **2.7.6 Tying**

Tying refers to the pricing practice where a customer who purchases a product is forced or obliged to buy another product needed in the use of the first. For example, the bubble jet printers that are often sold in computer retail stores often require one to purchase specific refill cartridges that are designed to only run with that type of printer. This is to ensure that the particular brand-product accessories are used to ensure the correct and optimal functioning of the printer and to obtain a desired quality of output. More often than not, it is used in much the same way as a two-part tariff to encourage higher profits. (Salvatore, 1998, p.485).

### **2.7.7 Bundling**

Bundling is a common form of tying. A customer buying or leasing a certain type of product is sometimes also required to buy or lease another product or service, even though he has a different preference or taste. The firm does not price discriminate, as in tying. Monopolies usually use this technique to increase their profits. (Salvatore, 1998, p.485). For example, many airlines or travel agencies will offer different holiday tour packages to different destinations to satisfy the demands of different consumers.

### **2.7.8 Prestige Pricing**

Prestige pricing usually refers to companies deliberately setting higher prices to attract prestige-orientated customers. (Salvatore, 1998, p.486). For example, a BMW costs many times more than a conventional sedan in the motor vehicle range, but there are many consumers that would purchase a BMW on the grounds of its implied status.

### **2.7.9 Price Lining**

Price lining involves the setting of a price target by a company and then developing a product that would allow the firm to maximize total profits at that price. (Salvatore, 1998, p.486).

### **2.7.10 Skimming**

Skimming refers to the setting of a high price when the product is first introduced and gradually lowering its price subsequently. The rationale behind this type of pricing practice is to determine the strength of the demand when the product is first introduced. (Salvatore, 1998, p.486). This occurs most often in durable goods such as PC's, where the demand is much greater when the product is first introduced. For example, the Pentium 3 when first launched was far more expensive than what it currently costs.

In some cases, a higher entry-level price associated with skimming can be used when introducing a new product to the market to give an indication of quality about the product to the consumer. An example being electric shavers when first introduced onto the market, they only began to sell in greater quantities once the market price for the newly introduced electric shavers had being doubled. Another important effect of skimming is to recover the research and development costs associated with bringing a new product onto the market. Skimming prices, however, last for a very short period of time, when entry prices are then reduced to allow the product to remain competitive within the market. (Cronje et.al., 1997, p 198.).

In the case of the PC, there are the cost of research and development, which initially keeps the price very high. There after, the price decreases as more computer producers manufacture and supply the most recent of innovations.

### **2.7.11 Value Pricing**

Value pricing is a pricing technique that is based on selling quality goods at much lower prices than sold previously. Manufacturers in this case, redesign the product to keep or enhance the quality while lowering costs so as still to earn a profit. (Salvatore, 1998, p.486). For example, many of the modern Asian motor car industries such as Honda and Toyota, utilize modern systems such as Kan-Ban, or the Just-In-Time system in order to lower costs and improve quality at the same time.

### **2.7.12 Market Penetration Prices**

Unlike skimming, Market penetration prices involves setting the initial price lower than the market price with the intention of gaining a reasonable market share. Competitors may find it difficult to market a competing product themselves, or profits may be too low to sustain any sales. This is a very aggressive marketing technique and one which is not very sustainable for longer period of time due to the product either running at a loss or inadequate profits to sustain the costs. (Cronje et.al., 1997, p 198.).

### **2.7.13 Market Price Level**

Market price level strategy is often used when there are a large number of competitors in the market and price levels are highly elastic. If the product within the market is below competitors price then consumers may feel that it is of a lower quality, but if the price is higher than that of competitors, consumers may avoid the product, unless influenced by prestige pricing. In order for the marketing managers to avoid this dilemma, the product needs to be well differentiated and thus regarded as unique. (Cronje et.al., 1997, p 198.).

### **2.7.14 Leader Prices**

Leader price is a pricing technique often used by retailers, namely, the so-called “specials”. Products are sold below market price for a limited period only. In many cases, this is a technique to lure customers into the shop, thus encouraging them to purchase goods with higher profit margins along with the specials. (Cronje et.al., 1997,

p 198.). Furthermore, this is an excellent method to clear out excess stock that requires excess storage at the end of the season, such as summer and winter clothes at season end.

### **2.7.15 Odd Prices**

It is thought that consumers more readily accept odd numbers as the final price of a product, such as R7,95, R3,35, R1,99, than even prices such as, R4,00, R2,00, and R10,00. (Cronje et.al., 1997, p 198.).

### **2.7.16 Bait Prices**

Bait Prices are a typically unethical pricing technique used by certain retailers. The idea is that a product is advertised at a particularly low price. When the consumer arrives to buy the product advertised, he is encouraged to purchase something with a much higher profit margin. In this case, however, the retailer does not even intend to sell the bait price item and in most cases, the particular bait priced item is not even in stock. (Cronje et.al., 1997, p 198.).

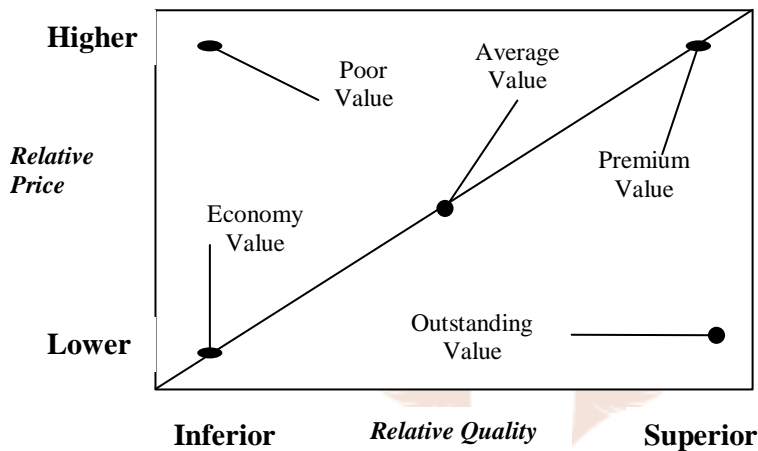


## **2.8 The Price and Value Relationship**

Quality can be defined either from an internal or from an external perspective. Internal quality refers to whether the product meets the organization specifications and standards. (Slocum, 1996, pp. 656-657). This perspective is often evident in organizations exercising total quality management (TQM) procedures in their production; for example, Motorola is certainly accredited with this style of management. External Quality Means achieving or exceeding the results that customers value and expect, for example Ford and Xerox emphasize the external view of quality and consider it to be a starting point in reaching consumer expectations.

Value is the relationship between quality and price, at least from a competitive perspective. Figure 4 represents a competitiveness value map on which an organization

can determine its price versus quality position relative to that of competitors. According to figure 4, customers who perceive superior quality at a lower relative price receive outstanding value. Organizations at this point on the map are likely to grow and prosper. Similarly, a customer who receives inferior value at a higher price perceives that the product has a poor value. In this situation, competitors are drawn into the market. The overall result from this map is that competitive pressure is most likely going to continually challenging organizations to provide greater relative quality at a lower price than competitors. (Slocum, 1996, pp. 654-655).



**Figure 2.4 Competitiveness Value Map**

(Source: Slocum, 1996, p. 654.)

## 2.9 Price Rigidities

An important analysis of the market mechanism and the influence that microeconomic decisions have on a macroeconomic level is the analysis of price rigidities. Price rigidities are commonly divided into nominal and real price rigidities, and influencing price setting behavior (or buffet prices) from shocks or fluctuations that may move through an economy.

## 2.10 Nominal Price Rigidity

New Keynesian emerged in the mid 1980's as a description of those new theories which attempted to provide more solid foundations for nominal price rigidities in

microeconomics. If the process of changing prices involved substantial changes in a firm's profitability, we would observe a high degree of nominal price flexibility. A firm operating under a degree of perfect competition would be considered a price taker. Prices would change automatically to clear markets as demand and supply conditions changed. If a firm charged a price above market clearing level, it would have zero sales. Similarly, if a firm would charge below market price, given that a firm's demand curve is perfectly elastic at the prevailing market price, then profits would be insubstantial. Therefore, firms in this environment have little price decision making ability (in or near perfect competition a firm would be considered a price taker). (Snowdon, et.al., 1994, p. 297).

When firms operate in an imperfectly competitive market, firm's profits will vary differentially with changes in its own price. This is because its sales will not fall to zero if it marginally increases its price. Price reductions will increase sales but result in less revenue generated per unit sold. In such circumstances, any divergence in price from the optimum will only produce second order reductions in profit. Hence, the presence of even small cost-to-price adjustments can generate considerable aggregate nominal-price-rigidity. Often referred to as the (PAYM) insight. (Snowdon, et.al., 1994, p. 297).

The private costs of nominal rigidities to the individual firm are much smaller than the macroeconomic consequences of such price decision behavior. A cornerstone of the (PAYM) insight is the presence of frictions or barriers to price adjustment, known as menu costs. These menu costs include the physical costs of resetting prices such as the printing of new price lists and catalogues, as well as the cost of management in organizing, co-ordination and re-negotiating of purchase and sales contracts with suppliers and consumers. (Snowdon, et.al., 1994, pp. 297-298).

In the presence of menu costs, near rational behavior causes nominal price rigidity. Shocks to nominal aggregate demand will cause large fluctuations in output and welfare. The essential feature of an auction market is that they are efficient where buyers and sellers do not need to come into physical contact (for example, financial assets), or the product is homogenous (for example, wheat trading). The prime feature of an auction market is that buyers and sellers need to be present simultaneously. Because of the scarceness of time and space, the majority of goods are never sold in



this way. Therefore, locations are chosen where consumers may view the products in their own time and convenience. The use of price tags is a rational response to the problem of heterogeneity. However, the use of electronic scanners and the process of bar-coding equipment, has reduced the effect of menu costs dramatically. (Snowdon, et.al., 1994, p. 301).

### **2.11 Real Price Rigidities**

The greater the decline in the elasticity of demand at the existing price, as output falls, the more the marginal revenue curve facing a firm shifts to the left, and the less incentive there is for a firm to reduce its prices. Thus, if the classical dichotomy is to fail, it must be that the marginal cost curve does not fall sharply in response to a demand driven output contraction, or that the marginal revenue does fall sharply, or some combination of the two. If real price rigidity is high, then the greater the cyclical sensitivity of marginal cost becomes. Hence nominal shocks have large real consequences the greater the degree of real rigidity. (Snowdon, et.al., 1994, p. 302).

Mild sensitivity of marginal cost to variations in output and pro-cyclical elasticity's of demand, will contribute towards real price rigidities. New Keynesian literature identifies several other potential sources of real price rigidities. These include:

- Thick market externalities: Buyers and sellers are not brought together without incurring search costs. If the market is thick during periods of high economic activity, then search costs will be lower, than in the case of thin markets. If thick market externality helps shift the marginal cost curve up in times of recession, or down in times of boom, then this will contribute to real price rigidities.
- Customer markets: The characteristic of customer markets is the low frequency of search relative to the level of purchase. Relative to search costs, the consumer has a large degree of mobility, shopping for the cheaper price. An increase in price will be noted by the market as the consumer will search elsewhere for a substitute product, but a decrease in price will not be noted by the market as the consumer base will enter the market, make the purchase and leave. This process will produce relative price stickiness, and act as price rigidity.

- Price rigidities and input-output tables: A single product may be comprised of many inputs from a great many producers. A shock in the market may cause prices of certain inputs to raise and leave other inputs unchanged. This acts as a damper on price fluctuations and can be considered real price rigidity.
- Capital market imperfections: Asymmetric information exists between borrowers and lenders of finance. Borrowers know all the facts regarding the purpose of the financing deal, while the lenders only have partial information as to the true nature of the deal. Therefore, external finance becomes more expensive than internal finance. If the cost of capital is counter-cyclical, then it too will act as price rigidity.
- Judging quality by price: In consumer markets where customers have imperfect information about the product being purchased, then prices may be used as a signal of quality. By lowering the price, the firm runs the risk of signaling to the consumer a deterioration of the quality of the product. This then may act as a real price rigidity.

(Snowdon, et.al., 1994, pp. 304-306).



## **2.12 Advertising**

Advertising is defined as a controlled, paid and non-personal marketing communication, related to a need-satisfying product and directed by a marketer at a specific audience. Advertisements are directed at target markets through television, radio magazines, newspapers, billboards etc. Expenditure on advertisements in South Africa for 1984 reached R3.9 billion Rands. (Cronje et.al., 1997, pp. 205-206).]

Advertising is an integral part of the pricing decision behavior as it links pricing practice with the basic target market. Advertising is also a direct determinant of the pricing decision process used by manufacturers and sellers to increase brand familiarity, which can lead to a higher perceived value by the consumer. Furthermore, advertising can be used as a determinant of quality and a measure of product importance by the consumer. (Ang, 1997, p.1)

In an article presented by Misra, et.al., 1997, it was proven that consistent with marketing theory, sales benefit more from improving the management of pricing and

advertising strategies. Advertising and pricing policy plays a significant role in long term sales. Naturally, neither are stand-alone issues, as the direct effects of pricing or advertising alone can have only limited effects, but if used in conjunction, may be an effective tool in any marketing strategy. (Misra et.al., 1997, pp 1-7).

The advantage with advertising is the grand ability to reach millions of people, expanding your target market and thicken the market by reducing some of the price rigidities that limit market access through limited information. Many organizations have directed their business towards more customer orientation, opening communication pathways by making use of the global information super highway, namely the Internet.

### **2.13 Internet and Online Shopping**

This is one of the more modern pricing systems where use of the Internet as an online shopping tool has assisted in lowering costs. For example, Internet shopping has done away with many of the modern menu costs that have been discussed earlier. Furthermore, the internet provides for “Virtual Shopping Centers”, where the need for complex physical shopping centers falls away, and storage space is reduced. Time factors are also greatly reduced which translates into further stimulating cost reduction.

For example, most banking concerns such as First National, Absa and Standard bank, have encouraged online banking by providing online facilities for their clients, anything from account inquiries, to long term bank loans. Edeka, a shopping chain in Germany, very similar to the Pick-n'-Pay in South Africa, used Internet to sell a number of products directly to customers on their home PC's. The results were incredible, with the internet server having collapsed several times due to the overload of internet users while the shop sold its products online.

The Internet however can be considered a marketing platform as it facilitates pricing strategies that companies can use to improve the appeal of their goods. One notable advantage is the large number of people that will be reached through Internet advertising. Within the context of the Internet, however, pricing practices such as

bundling, skimming, value pricing or prestige pricing are important tools used in order to win a substantial market share of any market segment.

Another factor that contributes towards the success of the Internet as a market tool is the time factor. By seriously reducing the time spent for acquiring information on desired goods, choice is greatly improved, resulting in an efficient customer market, breaking certain price rigidities and greatly facilitating the market process. Thus, if used wisely, the Internet can be an influential tool in designing many of the modern pricing strategies.

#### **2.14 Microsoft, an Ultra-Modern Technique**

Bill Gates is not an unfamiliar name, associated with the computer giant, Microsoft. Microsoft has a unique modern pricing strategy that needs at least some accreditation. The technological revolution is one that is developing at an exponential rate. Everyday possibly thousands of people reach a new degree of computer literacy, spurred on by the need to be “up-to-date” with technology. Japan was the first country to be accredited with 100 percent computer literate population, where as many developing nations are still accredited with a larger part of their population being illiterate.

The Microsoft technique is in effect, a system that is designed to force people to pay higher rates for the use of their product by continually upgrading the product, and making the older versions redundant. For example, not long ago, the basic Microsoft operating system was DOS (Disk Operating System) based. Currently, Windows 2000 or Windows NT is the standard operating system. The crux of the issue, is that by and large, the two systems are not compatible, and neither are the programs in-between. Thus in order to utilize the modern systems, so that the computers become compatible, either as local networks, or via the internet, firms become forced to purchase the new technology. This guarantees that Microsoft will keep their profit at a maximum, much like the operation of a monopolistic company.

The advantage here is that technology is spurred on at a rapid rate, driven by new advancements in research and development. The disadvantage is to the consumer, who is forced to constantly pay higher prices to upgrade their computer software, even

though, what they use would otherwise have being sufficient to fulfill their basic requirements.

The grand scale of this strategy makes it unique to bundling or tying, in that it is one where the consumer has little choice in the market, and competition to Microsoft is small. Furthermore, the grand scale of this strategy is one that demands a large degree of credibility.

## **2.15 Conclusion**

Price setting strategies are as extensive as the imagination of producers, retailers and wholesalers will allow. The consumers is limited by issues such as market thickness, search costs, perceived quality, perceived importance and defined value of the product. The importance of the market structure is not to be underestimated. For example, in the case of a monopolistic market, where pricing practices such as two-part tariffs are exercised, the consumer is likely to be negatively affected, whereas the monopolist is in a position to generate higher profits.

Price setting behavior is not only a method of profit maximization, but is also an extension of marketing strategies, used to generate and establish a larger market share of any target market. Modern communication mediums such as the Internet and the role of online shopping are not to be taken lightly as a mere marketing tool, but also as a unique pricing strategy. Millions of people are daily communicating with each other, making it cheaper and faster to increase specific product information and to establish a heightened perceived importance and product awareness in consumers. In conjunction with two part tying, or bundling, the objective use of the Internet may be considered an effective pricing strategy.

Alternatively, other pricing strategies such as price lining, and value pricing make market entry far more accessible by undermining the competitor advantage, and at the same time providing consumers with a larger degree of choice. In terms of a highly competitive South African coffin industry, which is spurred on by the increasing effects of the HIV/AIDS pandemic, pricing strategies are likely to be affected not only by

competition, but also by the low levels of income, the high rate of unemployment, the huge diversity of tastes and consumer preferences. Most undertakers offer a bundle of services in order to facilitate for the large cultural diversification in South Africa as part of their pricing strategy, where the coffin falls into the bundle as only a small part of the package.

However, the objectives of the organization need to be well defined in order for the pricing strategies to be used as a sharpened marketing tool. To be effective within the constraints of a competitive market and to achieve a desired goal, a pricing strategy must be developed to suit the interests of both the consumer and the producer.



**Chapter 3**  
**An Anthropological Review of How the Various  
South African Traditions, Cultures and Religions  
Influence the Choice of Burials and The  
Financing Thereof.**



### **3.1 Introduction**

The aim of this chapter is to establish the pricing decisions within some of South Africa's cultural establishments by briefly discussing the diversity of various cultures, traditions and religions of South Africa. This may therefore serve as a backdrop to understanding how these factors lead to pricing decisions.

South Africa is often referred to as a nation whose populace exhibits extremes in cultural diversity. It is difficult to try to limit customs or traditions to race, gender or geographic proximity. One factor that I deemed most important to the analysis of the coffin industry are the traditions and customs that circumscribed the religious aspects of death within some of our cultural societies.

**Cultural Aspects: a window to understand the consumer's motivation and decision-making behavior.**



### **3.2 The Cultural Spread within South Africa**

Nationally, South Africa has eleven official languages, these include, English, Afrikaans, Zulu Xhosa, South Sotho, North Sotho, Swazi, Venda, Tswana, Shangani, and Ndebele. However, it is very difficult to use these language barriers as borders of cultural differentiation, but, it does indeed make the analysis of consumer motivation and decision making a whole lot simpler. For the purpose of this study, I will use language to define cultural borders within South Africa despite the strong sense of overlapping evident via the migration of labor whose homes may be in one province and work being in another. This does not mean that only these languages are frequented in South Africa, or that cultures are limited specifically to these parameters. Examples of influence include the cultural integration of German, French, Chinese, Portuguese and Spanish speaking people, to mention just a few, as influencing traditional rites, customs and cultures.

Historically, the migration of labor from one region to another was strongly limited to geographical dilemma, including distance, climate, work opportunities, marriage rites,



tribal rule etc. Over the years, as the economy developed, so too did the general accessibility from one region to another become increasingly easier.

To understand the flow of people from one region to another, wage as a determinant in attracting labor from one cultural region to another, resulting in certain cultural mixes. During the post Smuts administration of 1948, a substantial number of Africans lost their jobs due to demobilization after the Second World War. This resulted in a stagnation of real wage rates. A shortage of skilled and unskilled labor developed in the 1960's, resulting in an increase in training of Africans. Simultaneously farmers began feeling the pull of labor towards urban areas and too found it important to raise wages in order to attract people back into the rural zones. These influences led to cultural mixing from either a pull (rural to urban or rural to rural), or push scenario (urban back to rural) (Hofmeyer, 1996, pp. 232-235).

Another factor not to be excluded is due to an internationally fixed gold price, many of the large mining concerns found it difficult to keep gold production costs down, and so began importing foreign migrant labor, who were prepared to work at lower wages than their local counterparts. This resulted in an additional cultural mix. Countries such as Malawi and Mozambique found it important to create policies to prevent labor from rushing into South Africa. The migration of labor from one region to another was further exacerbated by the inability of the homelands to support their ever-increasing populations, while the rural to urban pull continued at ever increasing rates. (Hofmeyer, 1996, pp. 235-237) Today, the cultural spread is evident by the large number of people, who maintain homes in one region and migrate to work in another for most parts of the year. However, for the purpose of the analysis most people are in a position to speak more than one language, therefore the emphasis of cultural segmentation should rest on mother tongue, as opposed to language spoken.

### **3.3 Early Religions in South Africa**

African traditional religions belong to a category of religions described under the banner of "primal religions". The primal religions in Africa are often referred to as traditional religions, and these traditional religions have often been shaped by outside

historical forces such as migration and warfare, and internal forces such as the influence of certain spiritual leaders and healers, from within the community. In most cases, primal religions have no sacred written scriptures, but were often passed from generation to generation orally and is co-extensive with being human. There is no attempt to convert people from other tribes or villages to their own particular religious ways of thinking or acting (Thorpe, 1991, pp. 1-3).

One of the earlier views of the local African Religion, as presented by George Theal, was based on the edifice of spiritual-ancestral existence and active participation to the extent that these spirits even had control over the powers of nature, such as drought and lightning. These spirits, were those of their predecessors and deceased chiefs. These spirits were often subdued with sacrifices, with the aim of returning the rain or ensuring a healthy crop. This however does not discount within their religions the existence of a single Supreme Being (Thiel, 1910, pp. 219-221). Furthermore, throughout Africa, a person who dies does not simply become an ancestor, as additional tribal rituals have to be carried out. The Zulu, for example, hold the “*ukubuyisa idlozi*” the “home coming” ceremony a year or two after the actual burial, where an ox is slaughtered, and certain portions are sacrificed to the ancestors (Thorpe, 1991, p 39). It must be noted that Ancestral Spirits in general play a central role in tribal culture by preserving the cultural heritage, bestowing prosperity or dealing out punishment (such as droughts or floods) as the case may be (Meiring, 1996, p 6).

An important note to the early religion base in South Africa is that the majority of the religions believed in a Supreme Being who is invisible and omnipotent. In some cases, the Supreme Being is a Deus Otiose, a creator God, who withdrew from creation, leaving control of everyday matters to ancestral spirits. African languages have many names for God; for example, Zulu refers to “*Umvelinqangi*” (the first one), “*uBaba*”, (father), or “*uThixo*” in Xhosa, etc. God is often seen as a spirit and is described as good, merciful and just. God too can be angry, inflict punishment or allow catastrophes to occur. Often however, unnatural death is ascribed to the work of sorcerers, witchcraft and evil spirits. (Meiring, 1996, pp. 8-12)

Ancestral spirits appear to make their will known in dreams and special places, for example, in cattle kraals and grave sites, or through mediums and diviners. In doing so, their role is to mediate between God and the tribe, bind the community together, take care of the daily needs of the tribe by sending rain and fertility, preserve the customs and traditions of the tribe and family. Most importantly, attend the *rite de passage* of each individual, lending help at times of birth, initiation, marriage, and death (burial). (Meiring, 1996, p. 15)

The emphasis on traditional religion does not imply that the primal religions of South Africa are the only religious beliefs bar Christianity, Islam, Hinduism, Buddhism, Judaism, etc. These are just as significant, and form a large part of the pricing decision behavior of majority of the South African population. This strong foundation based on the belief in the coexistence of the ancestral spirit is a corner stone of this entire research. It must be emphasized further however, that not only has Islam and Christianity had a considerable influence on Africa, but has also been influenced by African religions, resulting in for example, of “African Christianity” (Thorpe, 1991, pp. 3-4).

### **3.4 Historical burial rituals and traditions for selected cultures that coexist in South Africa**

In both primal religions and other traditional religions, a belief in life after death is discerned, although the exact nature of the belief varies greatly from culture to culture. The concept rests on the dichotomy between the physical body and the spirit, which is sometimes referred to as the “*moya*” (breath). Furthermore, the transformation from person to ancestor, is not always an automatic process. Certain rites and rituals need to be performed, depending on the culture base. The use of the term shadow “*Ísithunzi*” or “*Seriti*” are significant in different contexts to different cultures, often referring to the part of us that becomes the ancestor. For example, the Zulu may refer to the departure of the “*Ísithunzi*” (*shadow*), when a person dies (Hammond-Tooke, 1989, pp. 53-54).

The following discussion discusses some of the basic burial traditions of some of South Africa’s cultural religions. Unfortunately, today, much of what is discussed here has been somewhat altered due to the influence of western cultures and the break from

traditional values, perhaps driven via labor migration, the expansion of global awareness through media influence and the weakening of traditional social cultural borders. However, this discussion is a cornerstone to the dissertation, in that the values of many of the historically traditional anthropological cultures are still very significant in the behavior, values and attitudes expressed by the majority of South Africans towards modern burial customs. By understanding the traditional values, I hope to highlight the modern decision making mechanisms amongst the traditional South African population.

### **3.5 The San People “Bushmen” of the Kalahari**

The first of these traditional cultural rites investigated is that of the San people. This is probably one of South Africa oldest existing communities as they date back in South African history some 25000 years, and thus is significant from a historical perspective. In prehistoric times, the San where spread over most of Sub Sahara Africa. Today however, their numbers have dwindled to approximately 60 000, living largely in the semi desert areas of the Kalahari (Thorpe, 1991, pp. 9-12).

The religion of the San is a spiritual mesh interwoven with their social and natural environment filled with symbolism. For example, the Eland is a symbol of rain, while the stars are symbolically described as the watchful eyes of their ancestors. Life is considered energy, and energy is considered divine. Life is considered a cyclical process of birth and death (Thorpe, 1991, pp. 28-29).

Death for the San is treated with the same causal approach as birth. When a person dies, that person is buried with their possessions in a fetal position, knees bound by a rope close to the chest. The body is laid in a grave on its left side, facing east. The grave is filled, and the spot where the body was buried is avoided for several years. There are no formal mourning rituals or ceremonies. Historically, when one of the family became too old to continue the trip, they where given a small amount of water and food, and simply left behind (Thorpe, 1991, p. 27). This was necessary in order to ensure the survival of the rest of the tribe. It has been noted that the elderly where carried on the backs of younger men when they could not walk during a migration from place to place. The elderly where highly valued in the San clans.

### 3.6 The Zulu people of Natal

The religious foundation of the Zulu, is the existence of the Creator, often referred to as “*uMvelinqangi*”, who is the source of all being and through the knowledge of his nature is beyond the comprehension of man. It is from *uMvelinqangi* that the first man was created and is often associated with the word “*uNkulunkulu*”, literally meaning the First Ancestor, or The Great Father of all the Spirits of the Zulu Ancestors. It must be noted however, that even though “*uNkulunkulu*” is regarded as a man, even though he derives his existence from “*uMvelinqangi*”, deity is never extended to “*uNkulunkulu*”, and even though prayer is often extended to the Ancestors, prayer is not extended to “*uNkulunkulu*”, which is a direct command of the “*uMvelinqangi*”. (Binns, 1975, pp. 76-78).

The Zulu maintain a strong cultural sense or belief that life continues after death, and members of the family or tribe are remembered and continue to maintain a place in the family or tribal group for three or four generations. Death and old age are considered natural and people are expected to live long enough to bare their children and see their grandchildren. The death of such a person is referred to in words, which imply continuing existence in an invisible form. Importantly, the body is buried in the earth where the ancestors or “*amadlozi*” are said to reside (Thorpe, 1991, pp. 38-39). The death of someone who is not of ripe age, (been able to physically see their grandchildren) is normally associated with the intervention of witchcraft or sorcery. When old people die, they are not mourned, as this is considered the way things work, but when a young person dies, it is considered that there is perhaps someone who has caused their death. In some cases, grave watching becomes important, especially in the case of an untimely death. This is to ensure that no further evil is done to the deceased, besides the untimely death. The length of time of the grave watching is dependent on social status of the person whom has died. (Berglund, 1976, pp. 79-81).

In Zulu thought, when someone is sick, the whole person is afflicted, that is physical and spiritual. No fundamental distinctions are made between the visible physical being and his invisible spiritual being. The spirit after death is viewed as the whole person, and not simply the part that has being separated from his body. Similar to the tribal

beliefs of the San, well being implies both unity and continuity. An individual exists to fulfill those obligations, which supports and maintains the group. The group takes precedence over the individual because the individual cannot exist without the efforts of the group (Thorpe, 1991, p. 39).

According to Binns, The Zulu's believe that the shadow, (and thus the term "shadows" often use to describe the ancestors), will ultimately become the "*iThongo*" or spirit when the body dies. Interestingly, the word dies, according to traditional Zulu custom, is a rather crude expression for death, but rather the term, "*Úyagodukele*", (gone home) is preferred, signifying that the person has now joined the Ancestors. The moment that someone has "*Úyagodukele*", it becomes the duty of the eldest son to take a handful of thatch from the home of the deceased and present it to the chief. No words are required, the message is usually very clear (Binns, 1975, pp. 82-83).

### **3.7 The Tswana of Central South Africa**

The Tswana themselves are seen overall to be homogenous and are classified as a single group in relation to the other cultures of South Africa. Local variations occur in dialect, language, (that is Sotho), and social structure. The official religion of most of the traditional tribes is Christian, due to the strong influence of missionary intervention from about 1860, but it is difficult to generalize about the nature of Tswana Christianity because of the influence of their traditional religions that have been superimposed onto the Christian approach and attitudes (Schapera, 1953, pp. 9-58).

Historically the Tswana believed in a Supreme Being, the creator of all things and molder of our destiny. In addition, the Tswana believed in the survival of the dead. They held that the souls of the dead people became spirits, "*badimo*", which ultimately found their way to the world located somewhere underground. In the underground world, the deceased would continue existence as before, but are able to actively partake in the affairs of their living descendants (Schapera, 1953, pp. 58-61).

Today however, beliefs concerning the dead vary greatly. Influential men are buried in their cattle kraals, but all other people except for the very young are buried in special graveyards on the outskirts of their villages, and wherever possible, in wooden coffins.

Traditionally though, the grave was a round hole with a niche on the side in which the person is placed in a sitting/crouching position, wrapped in the skin of an ox or the clothes he wore while still alive, carrying the weapons he used for hunting (Schapera, 1953, p. 61).

The mix of modern social religions such as Christianity and the traditional Tswana primal religions are very appropriately expressed in today's modern society. In several informal interviews with members of the Tswana culture, the act of slaughtering an ox, or sheep on the day of the funeral is very significant, acknowledging the position and respect of the ancestor. In some cases, it will be considered completely disrespectful to not slaughter at the funeral. The act of not slaughtering at a funeral is often done when the person being buried has shown signs of living a "disgraceful" life.

### **3.8 The Basuto, People of the Maluti**

The descendents of the Tlokoa tribe, which at one time was considered one of the most powerful military groups, under the rule of Queen Mantatisi and her son Sekonyela, and the tribes Peli, Phuthing, Sia, Fokeng Koena and Taung. They were situated in the now Lesotho, bordering KwaZulu Natal, east of the Orange Free State, and north of the Eastern Cape. Basutoland, or Lesotho as it became known was once a British Colony of some importance. The social structure of the Lesotho is strongly based on very traditional beliefs, which vary slightly from clan to clan within the Lesotho nation. (Ashton, 1967, pp. 1-11)

Religiously spoken, man is composed of two elements, the first been the body, "*mele*" and the other been the incorporeal spirit, "*moea*". The body can be perceived by the senses, and is subject to decay and distraction, while the spirit is considered indestructible and immortal. In life during the day, the spirit resides in the body, but at night, it leaves the body of its own accord and wanders about at night. In death, the spirit simply leaves the body, but not immediately and is sometimes even buried with the body. The orthodox doctrine is that the spirit is not completely released from the body until the grave is made "firm". During the final rites of the burial, the spirit rises to its feet and proceeds to a place called "*Ntsuanatsatsi*". To help the spirit get onto its feet, the body is buried in a crouching position and faced in the appropriate direction.

The process of orientating the spirit to reach the final destination is often accompanied by means of sacrificing or slaughtering an animal (Ashton, 1967, pp. 112-113). A practice which resembles that of the Zulu and Tswana.

### **3.9 The Xhosa**

The tradition of the Xhosa culture is similar to that based on most of the other traditional religions. That is, death is literally that departure from earth of man's inner self. However, there are stark differences. The cattle kraal is a sacred and holy place and when the ancestors visit, it is the cattle kraal that they choose for this purpose. Thus, for the purpose of a traditional burial, the kraal becomes the place of burial. A chamber is dug, approximately six feet deep, and then at its base, a tunnel is bored in an easterly direction, (towards the rising sun), in which the body is laid. The body is usually wrapped or sewn into the blankets that he wore during his life. It is then placed onto a sleeping mat (Laubscher, 1975, pp. 50-55). It is worth noting that the use of the sleeping mat is still rather significant today, in that the coffin is often laid on a sleeping mat and covered with a blanket before being lowered into the ground.

After the funeral, the mourners wash themselves, similar to a purification ritual. Thereafter the women gather at the hut, and talk loudly of the virtues of the person who has died so as to inform the spirit world of the arrival of the person who has just arrived at the place of the "*Izinyana*" (Ancestors). The new head of the kraal is instructed to slaughter a goat. This sacrifice known as "*Ukuhlanba*", (wash hands), is symbolic of the purification of the hearts, thus everyone who has attended the funeral will not bear malice or jealousy (Laubscher, 1975, pp. 50-55).

### **3.10 The African Initiated Churches**

The purpose of these African Initiated churches, is an attempt to reconcile Christianity (or Islam) with African tradition. In the liturgies of these churches, abundant opportunity is given for warmth, empathy, and communal emotion, such as rhythmic dancing and singing using traditional melodies. Church administrative governing is hierarchical, so as to follow traditional tribal management structures. The role of the



spirit, and traditional healing are incorporated in a holistic fashion, to resemble the psychosomatic approach to tradition. (Meiring, 1996, p. 23)

### **3.11 Zionism, an example of African Christianity**

African independent churches have existed in Africa for over a hundred years, and at present it is estimated that there must be well over 3000 independent groups in the country, consisting of well over 25 percent of the South African population. In Soweto alone, it is estimated that there must be some three hundred groups alone, including the Zionist type churches. (West et.al., 1975, pp. 190-191)

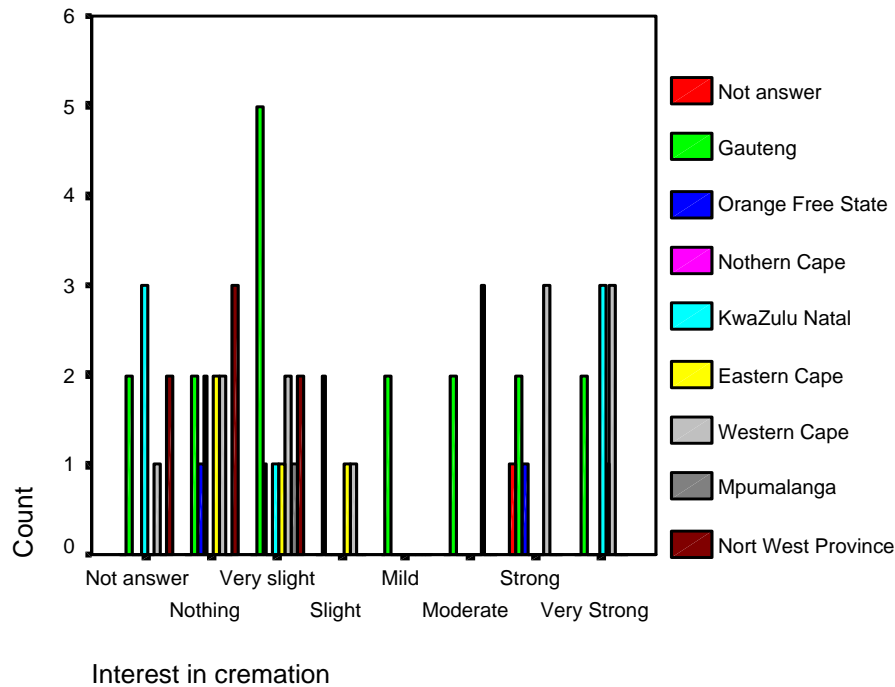
In 1908, the teaching of the American based Christian Catholic Apostolic Church of Zion and the Apostolic Faith Mission, with their emphasis on healing, adult baptism and baptism of the Holy Spirit, caused a revolution in African thought. Thus the Zionist movement was born. It is worth noting that in the Zionist religion, it is accepted that healers obtain their power from God, although they may be assisted in their work by their ancestral spirits. Zionists reconcile the role of witchcraft and sorcery as an important source of illness, thus sailing close to the traditional belief of African religion. (Hammond-Tooke, 1989, pp. 136-139)

The belief in the ancestors, combined with the belief in Christianity, has made it possible to merge the independent views that exist within traditional ancestral approach and the modern church view. This point is important, for when it comes to burial practices chosen by the majority of South Africans, who prefer a Christian burial, the alternative choice of cremation is totally unacceptable, which thus in turn then becomes a consideration in the pricing choice made by both the supplier and the consumer.

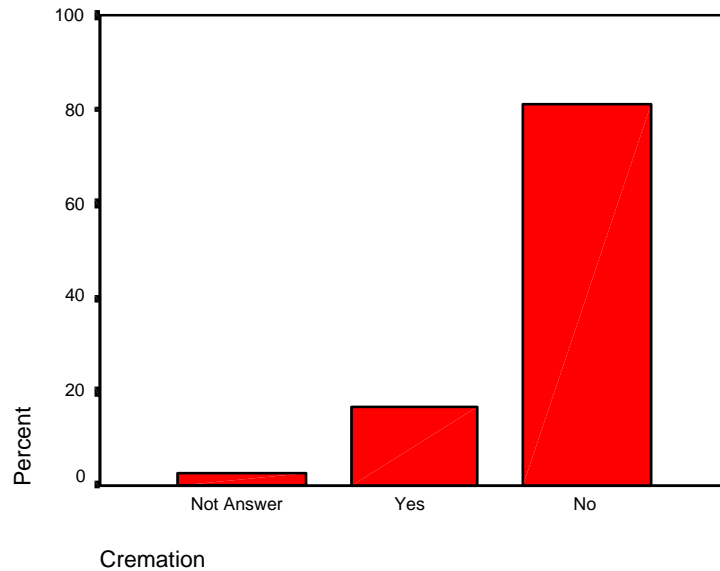
### **3.12 Cremation, a Taboo in African Primal Religion**

In order to understand the significance of cremation on African religious cultures, it is wise to simply define cremation. Cremation, in its true sense of the word, is the burning of the remains of the dead, until nothing but ashes remain.

In the African Cultures as discussed in the previous sections, it became clear that both the historical “Pagan”, religions, (as it was so inappropriately named by early missionaries), and the modern African Christian religions, for example, Zionism, the belief in the existence of the spirit which inhabits the body, is a foundation to their belief in a continued existence.



**Figure 3.1 Percentage Interest in Cremation by Province**  
 Source: Baur, Consumer survey, 2001



**Figure 3.2 Percentage Interest in Cremation**

Source: Baur, Consumer survey, 2001

In a survey conducted on the values of the traditional rural and urban African towards cremation, the findings were that:

1. It would lead to the inability to attend a funeral.
2. The tradition of living in a community with their dead will be broken.
3. The spirit will bring unhappiness to the Community and Family
4. The spirit will also die.
5. God will condemn the Spirit to hell.

The premise behind the decision making was exasperated by the fear of the unknown and the desire for the return to traditional burial customs. (Molyneux, 1985, pp. 161-162)

According to Bopape, the belief of the traditional cultures is that the fires of the cremation will also burn the spirit, and therefore it will be impossible for the one cremated to take up his or her position among the ancestors. Therefore, cremation is considered out of the question by most traditional African people. (Bopape, 2001, pp. 1-3)

According to the data gathered in the consumer survey, over 80 percent of the respondents reported that they did not purchase the coffin for cremation purposes. When further investigation was conducted, the majority of those traditional cultures showed very little interest in the cremation process, however the Tswana speaking seem to be showing interests in cremation as an alternative. There is thus very strong evidence to prove that the traditional customs are still held in high esteem by the majority of the population. However, the introduction of alternative forms of burial, is possible, but not without a strong religious re-appraisal.

|               |             | Cremation  |     |    |
|---------------|-------------|------------|-----|----|
|               |             | Not Answer | Yes | No |
| Home Language | English     |            | 7   | 4  |
|               | Afrikaans   |            |     | 2  |
|               | Zulu        | 1          |     | 11 |
|               | Xhosa       |            |     | 31 |
|               | South Sotho |            |     | 15 |
|               | Swazi       |            |     | 5  |
|               | Venda       |            |     | 4  |
|               | North Sotho |            |     | 7  |
|               | Tswana      | 2          | 13  | 9  |
|               | Shangani    |            |     | 4  |
|               | Ndebele     |            |     | 6  |

**Table 3.3 Home Language and use of Cremation**

*Source: Baur, Consumer Survey, 2001*

In figure 3.2, a comparison was made between those interested in cremation and the province in which they lived. From the figure, it shows a general interest across the country, but again, if compared to table 3.3, there is a strong indication that within the sample, the traditional cultures prefer the traditional burial as opposed to cremation. Thus, the demand for burial coffins as opposed to alternative and “cheaper” versions is greatly increased, putting pressure on limited incomes. A coffin for the purpose of cremation does not need decoration fittings, or in some cases consists of a very simple box, which forms the inlay of an elaborate rented model.

### 3.13 An Analysis of Consumer Demand

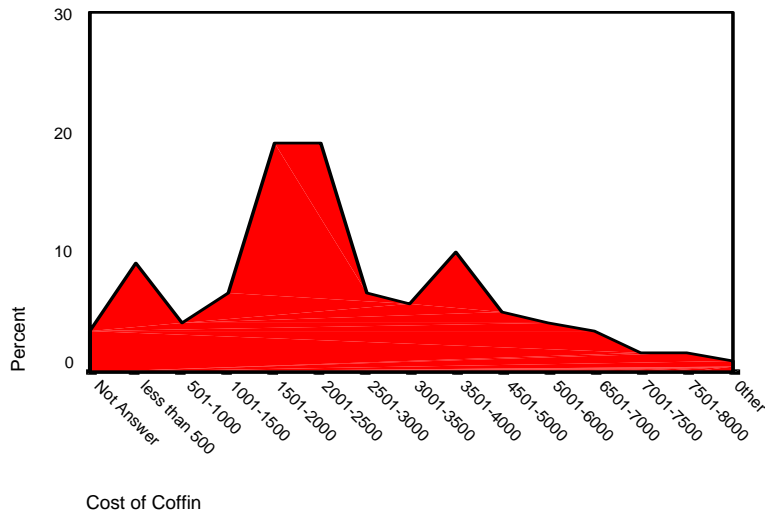
South Africans can boast a whole culture that surrounds the funeral business. Costs includes everything from cemetery costs, that is, the cost to rent the burial space, which can vary from area to area, the coffin and undertaker fees, transportation of body to homeland, transportation of guests to cemetery and finally the banquet thereafter. An upsurge in the demand for burial space has caused a burial space shortage in South Africa. Reasons include unanticipated movements of people towards the cities in search of employment, socioeconomic conditions, AIDS-related deaths and the financial strain on local authorities to provide cemetery space. (Johannesburg City Parks, 2001/2002, p. 38).

In a Human Science Research Report presented in 1984, it became apparent that there was a blending of western and traditional customs in bereavement behavior, and that the urban funeral offered an opportunity for the family to assemble. It was noted however that the expense of the funeral was secondary to giving the deceased an impressive funeral in order to satisfy the spirit, so that bad luck would not fall on the family or community. (Molyneux, 1985, pp. 160-161)

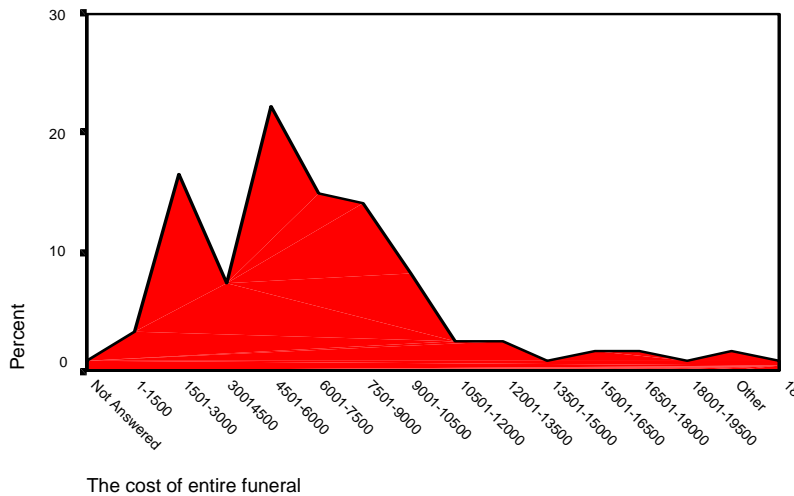
Attendance at a funeral is considered a prerequisite, and according to Chris Molyneux, 92% of the respondents had attended at least three funerals in 1985. 94% of the respondents whom he had sampled concluded that they had provided for their own deaths via a burial society (60%), or a funeral Insurance (22%), (Molyneux, 1985, p. 161).

Another issue of concern is the huge amount spent on the burial feast. Traditionally it was important to slaughter a sheep, goat or ox, in the understanding of the relevant traditional ancestral custom. Today however, huge amounts of money are gathered in order to fund lavish banquets, with the slaughter of an ox, (referred to as a bus), or Sheep, (aptly referred to as a Taxi). In one case, during the survey, the respondent claimed to have spent a large amount in order to show her love for the deceased, but on the other side of the coin, the huge amounts spent are not justified by the social income of those who have to pay.

From Figure 3.4 and Figure 3.5, the spread of the data is somewhat similar, in that it shows a strong positive kurtosis, leaning towards unemployment. (See figure 3.6: *Monthly Income of Sample population.*). A small positive correlation exists between the income of those



**Figure 3.4 Cost of Coffin**  
Source: Baur, Consumer survey, 2001



**Figure 3.5 Cost of Entire Funeral**  
Source: Baur, Consumer survey, 2001

contributing towards a funeral, the cost of the coffin (.229) and a small positive correlation of the entire funeral, including the coffin (.342). This implies that the costs

of a funeral is often not completely covered by those paying for the coffin and the funeral and also implies that the costs are somewhat beyond the means of those who are actually paying for it. (See Figure 3.6). Therefore, alternative methods of payment are used to finance the funeral, (indicated by the small positive Pearson correlations). These additional sources of funding include private savings, the help of friends, the assistance of family, expensive bank loans, (perhaps in the form of overdraft), societies and stokvels, the assistance of churches and the contribution of employers.

In Table 3.6, the cost of the entire funeral including the coffin exhibited a larger positive correlation to the cost of the coffin, (.689). This implies that the more one is prepared to spend on the coffin, the more lavish the entire funeral is likely to be.

**Correlations**

|                            |                     | Monthly Income | Cost of Coffin | The cost of entire funeral |
|----------------------------|---------------------|----------------|----------------|----------------------------|
| Monthly Income             | Pearson Correlation | 1.000          | .229*          | .342**                     |
|                            | Sig. (2-tailed)     | .              | .011           | .000                       |
|                            | N                   | 121            | 121            | 121                        |
| Cost of Coffin             | Pearson Correlation | .229*          | 1.000          | .689**                     |
|                            | Sig. (2-tailed)     | .011           | .              | .000                       |
|                            | N                   | 121            | 121            | 121                        |
| The cost of entire funeral | Pearson Correlation | .342**         | .689**         | 1.000                      |
|                            | Sig. (2-tailed)     | .000           | .000           | .                          |
|                            | N                   | 121            | 121            | 121                        |

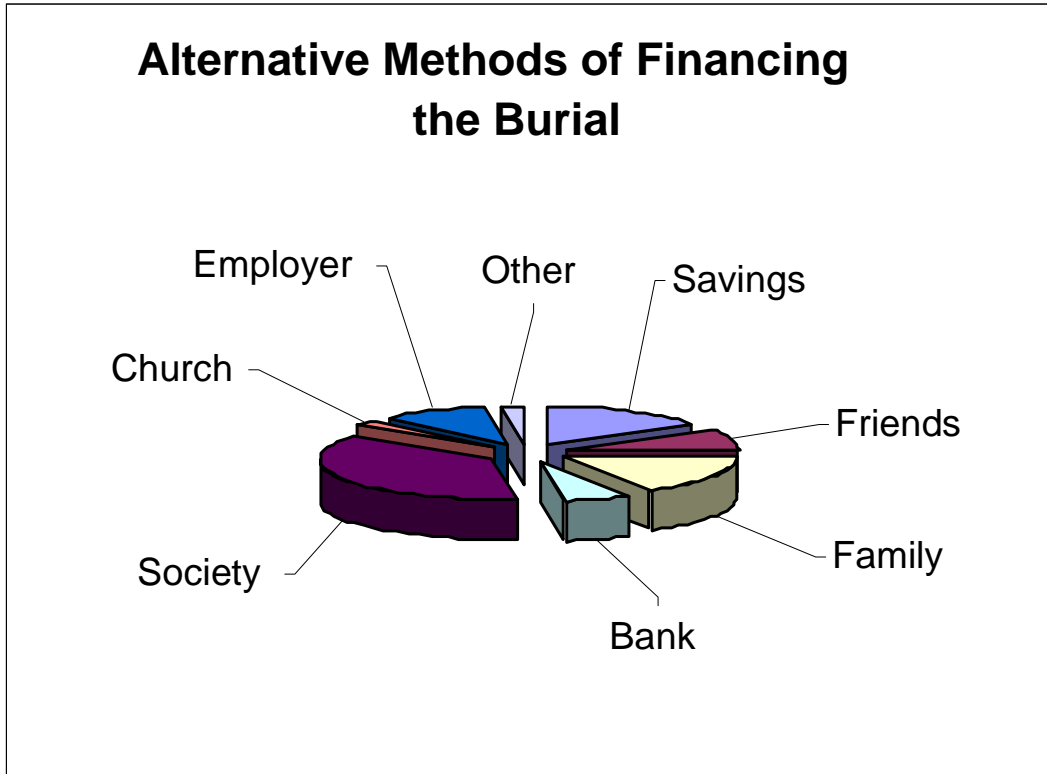
\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 3.6 Correlation Matrix, Income to cost of coffin and cost of entire funeral.**

*Source: Baur, Consumer Survey, 2001*

This issue is further confirmed by Father Bonginkosi Mkhize of St Andrews Anglican parish who noted that most of the funerals that take place were a little more elaborate than what could normally be afforded. Similarly, Father Nkosinathi Mayaka of the Evangelical Lutheran Church claimed that the Nguni custom of taking parcels “*iqhaga*” to weddings and funerals have slipped away, and is concerned that most who attend these functions expected the bereaved family to give them a party. (Rickard, 2000)



**Figure 3.7 Methods of Financing the Burial**

Source: Baur, Consumer survey, 2001



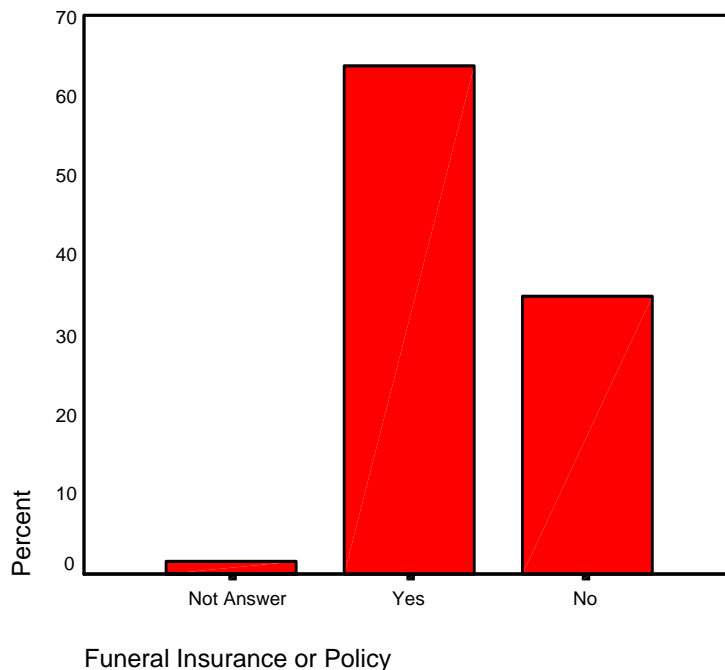
### 3.14 Financing Within the Funeral Industry

Summary of Payment for Funeral Expenses in the Case of no Funeral Insurance or Funeral Policy

|  | Percent | With Insurance | Sample Percent | Hold No Insurance | Sample Percent |
|--|---------|----------------|----------------|-------------------|----------------|
| Pay for Funeral from Savings                     | 17.40%  | 11             | 9.09%          | 10                | 8.26%          |
| Pay for Funeral with the Help of Friends         | 9.10%   | 3              | 2.48%          | 8                 | 6.61%          |
| Pay for Funeral with the Help of Family          | 19%     | 5              | 4.13%          | 18                | 14.88%         |
| Pay for Funeral with the Help of a Bank Loan     | 6.60%   | 8              | 6.61%          | 0                 | 0.00%          |
| Pay for Funeral with the Help of Society         | 40.50%  | 29             | 23.97%         | 19                | 15.70%         |
| Pay for Funeral with the Help of a Church        | 3.30%   | 2              | 1.65%          | 1                 | 0.83%          |
| Pay for Funeral with the Help of a ones Employer | 10.70%  | 11             | 9.09%          | 1                 | 0.83%          |
| Pay for Funeral with Other Help                  | 2.50%   | 2              | 1.65%          | 1                 | 0.83%          |

**Table 3.8: Percentage of Respondents, which carry Funeral Insurance, and Support the Funeral Costs with Additional Aid.**

Source: Baur, Consumer Survey, 2001

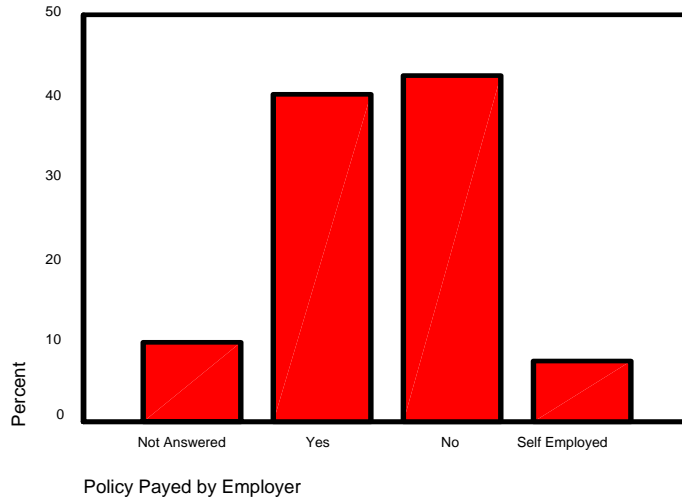


**Figure 3.9 Percentage with Funeral Insurance or Funeral Policy**

Source: Baur, Consumer survey, 2001

See Table 3.8 and Figure 3.9: Approximately 65 percent of the respondents in the consumer survey indicated that they had a funeral insurance, while the remaining approximate 35 percent had to rely on other means for financing a burial. It is important to note that those who held a funeral insurance did not rely solely on the funeral insurance for financial support, but also sought financing elsewhere. From figure 3.9, those with insurance drew additional funding from societies, savings and the help of their employers, as the top additional sources. It is interesting to note that those with insurance seemed to have access to bank loans, possibly by virtue of been employed. Those with no funeral insurance had to rely on the help of societies (to a similar degree as those with funeral insurance), but relied more on savings and the help of friends, and less on the help of an employer or bank loan.

In a research paper studying the effects of the burial aid societies and their influence on people within rural areas, it was suggested that burial aid societies were directed at the poor and less educated classes, within South Africa. In a nationwide survey conducted by the institute for social and demographic research of the Human Science Research Council, (HSRC), it was found that 80 percent of the sample made monthly contributions to burial aid societies. (Ferreira, 1983, p. 1) However, according to Molyneux, funeral insurance is prevalent amongst the lower income groups. (Molyneux, 1985, pp. 75-77) From the consumer survey, this figure seems to have fallen to 65 percent, despite the high levels of unemployment and escalating costs of funerals. Within the employment sector, it is again worthwhile to mention that those captured in the sample, 60 percent of those who were employed, indicated that the employer was contributing towards their funeral insurance. (See figure 3.10).



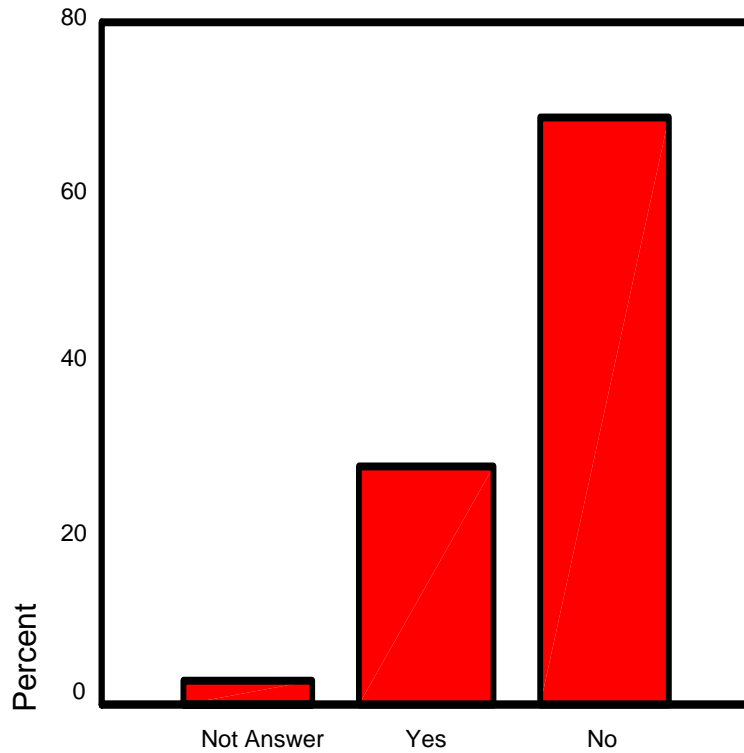
**Figure 3.10 Employer Contributes Toward Funeral Insurance**

Source: Baur, Consumer survey, 2001

This is contradictory to what one would expect when one sees that some policies are reasonably inexpensive. The advantages of an undertaker holding a particular companies insurance policy (many undertakers provide policies which are underwritten by larger companies), is that business is literally brought to that undertaker belonging to the specific insurance group.



The existence of such schemes is prevalent among the undertakers surveyed. Over 80 percent of the respondents reported underwriting of funeral insurance policies. This is normally to the benefit of the consumer who has an agreement with the undertaker as to what will be provided, and in many cases is provided with discounts and other favorable choices that may be to the benefit of both the undertaker and consumer. (Molyneux, 1985, p. 77).

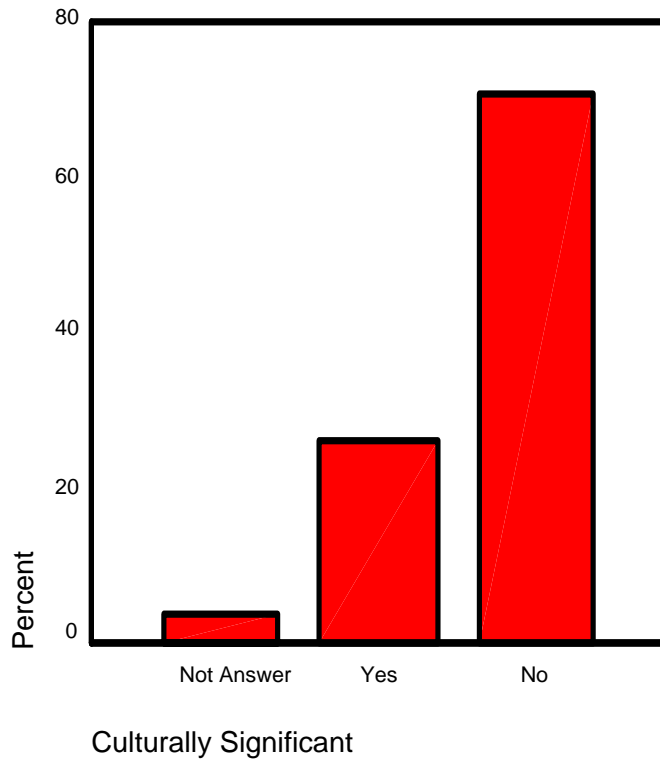


Funeral Insurance or Policy

**Figure 3.11 Percentage Unemployed with Funeral Insurance or Policy**

Source: Baur, Consumer survey, 2001

Looking at figure 3.11, the situation becomes rather ambiguous when comparing the number of unemployed with a funeral insurance. Only approximately 30 percent of unemployed are ensured as opposed to the 65 percent ensured from the sample, thus indicating that there is a large financial strain placed onto the hands of those with an income to assist those that are unemployed.



**Figure 3.12 Percentage Culturally Significant**

Source: Baur, Consumer survey, 2001

According to Natrass, the true unemployment rate, as measured by the October Household survey rose from 32 percent in 1994, to 38 percent 1997. (Natrass et.al., 2000, p. 20). This was strongly confirmed when the research survey showed an unemployment rate of over 32 percent. Thus, there is a great deal of pressure been placed on those that not only have to pay for their own losses, but the losses of friends and family too.

Ferreira argued that the support received by a burial aid society lies in the argument that there exists a powerful social and motivational pressure between elderly people to be “properly” buried. She mentions an interesting point; the motivation is less a culturally symbolic relevance than a social relevance. (Ferreira, 1983, p 11). This correlates with the consumer survey, whereby approximately 70 percent of respondents indicated that the coffin purchased was not culturally significant. (See figure 3.12).

The concern of those who invested in a funeral insurance was based on the financial responsibility having been shifted onto the family and children, whom would share the disgrace of not been in a position to finance the burial, and therefore be forced to borrow from friends and relatives. Similarly, by ensuring that the burial has been properly provided for enables the elderly to maintain self esteem by remaining independent and responsible within the community. (Ferreira, 1983, pp. 11-12).

### **3.15 Concerns about funeral polices and insurance's.**

Benefits of funeral policies are determined by who supplies the policy, and how the policy is constructed. Income dictates the type of policy that is purchased by individuals. In the report by Ferreira, several factors have contributed towards the negative appeal of funeral insurances. These are:

- Arbitrary contribution amounts, which varies from member to member, and depends on the scheme with which the investment is made. However, the differences that exit between burial societies and differences from person to person are of some concern. In some cases it may be risk determined, in other cases it may be consumer preference.
- Collection of dues. Either dues are paid into a company office, or representatives of the company may visit and collect the money from their clients. Alternatives, of course, include debit orders, bank transfers etc. However, in the case of physical collection, where missed payments are likely, termination of contracts can occur when a payment of one to three payment terms or months have been missed. The problem is that all funds invested in the policy are absorbed by the company, and the client may loose on the investment. This would seem very relevant in today's world, with an unpredictable future, most consumers stand to loose from the deal.
- Misunderstanding as to what is actually covered by the funeral insurance, in most cases today, a funeral insurance is paid out a fixed sum, and the consumer gets to decide on how it is spent. However, in many cases, the consumer is still very much limited in choice.
- Unrealistic burial costs. This is a very relevant point that needs a little analysis. The costs for funerals are consistently increasing, and as consumer expectations rise concerning the layout of the funeral, then so does the desire to increase the

spending. There is thus a difference to what the policy pays out, and what is desired by the consumer at the end of the day, therefore, additional funding again is required, but to keep up with what the consumer wishes to spend at a funeral is dependent again on the type of insurance purchased.

- An issue of some concern in an economic climate that is experiencing irrational economic fluctuations, is the ability of an insurance company not to be rendered bankrupt before the time of its payout.

The prime motivation behind being a member of a funeral insurance, policy or society is to ensure that there are enough funds in order to be properly buried and thus uphold the dignity of ones family in the community. (Ferreira, 1983, pp. 4-13).

This point was confirmed during the consumer surveys, when constantly, the issue of respect for those who have died is shown in the type of funeral that is provided. This ties up with the importance of recognizing the influence of the ancestors after their death on their relatives, and therefore, despite the concern that the choice of the coffin is not solely culturally significant, the significance of the position of the ancestors is still strongly maintained.

### **3.16 The Influence on the Economy**

South Africa is currently experiencing strong devaluation of the local currency. This in turn, places large inflationary pressures on consumer goods, and subsequently erodes at savings, which are already under pressure due to the relatively large unemployment rate already characteristic of our economy.

The coffin industry, which is increasingly driven by the increase of HIV/AIDS, is experiencing strong contradictory push-pull influences of the consumer demands and market competition. In places like Soweto, for example, the number of undertakers has increased to 150 registered funeral parlors. (Mathanda, 2001, pp. 24-25). This combined with the high cost of funerals, (including the burial feast, the slaughter of the ox, the hiring of buses, etc), puts additional pressure on scarce incomes, and virtually non-existent savings.

The coffin industry is clearly further driven by the cultural desire to satisfy and maintain the respect and dignity of the ancestors, which should not be taken lightly. Furthermore, the social norms and modern religious customs should be maintained in order to show our love for those that have passed on, and not encourage scandal within the community due to perceived disrespect.

Another cornerstone to this argument is that those with regular incomes are constantly under pressure to assist those who are not covered by funeral policies, or those that have policies which do not contribute sufficiently enough to pay for the funeral. In some cases, with the growing number of AIDS deaths, the children are left with the responsibility of bearing these costs.

The influence of funeral insurance on the economy can also be considered negative due to the miss allocation of resources, which are confined to specific sectors within the economy. Naturally, funeral insurance is increasingly susceptible to risk, but due to the inability of mortals to see into the immediate future, high risk for the policyholder is assured. As mentioned above, depending on the type of insurance that is purchased, and the target sector, there are many positive and negative consequences.

Should a person lose their job for an indefinite period, and no further funeral policy payments made, this may result in the termination of the contract. Obviously, the income and the education of the consumer will determine the type of policy that they are likely to choose, and the success of the investment. As mentioned earlier, most policies are aimed at the lower income and less educated population groups. Thus, there is a disparity between expectations and outcome. This will negatively effect the consumer and influence the economy.

Combining funeral policies provided by undertaker with consumer incomes, which dictate to a large degree the type of policy, results in inefficiency in the economic system. Consumer choice is thus limited to the “rules” of a policy, and limits the consumer’s choice. In cases of large policy providers, for example, AVBOB, which allows the consumer a wider range of choice and which is consistent with the flow of job seeking migration there will be definite benefits to the consumer. However in the



case of smaller (and sometimes cheaper) policy providers, the consumer is strongly limited, distorting the market mechanism and providing large inefficiencies in the market.

In an interesting article by Lundburg, Over and Mujinja, the household's human and physical capital, that is, its ability to self ensure is a critical evaluation in the economic impact of a funeral on a households. Resource abundant households rely more on private transfers, whereas resource poor households rely relatively more on credit. This supports the hypothesis of Fafcamp and Lund. For example, In Kagera, (Tanzania), where this analysis was done, a donor would make a transfer to a rich household and trust that the recipient will pay in the future. There is an explicit contract for repayment. For a poor household, the contract must be explicit (that is, some guarantee must be made). Furthermore, resource abundant households are wealthy, not only in physical and human assets, but also in social assets or social capital. (The wealthy have access to wealthy friends and relatives in times of crisis). These quasi-insurance transactions are personalized functions of the characteristics of donor and recipient, and not of impersonal market transactions. In this case, the impact of death on a family is worse for a poor household. (Lundburg, et.al., 2000, pp. 978-979).

However, within the South Africa market, (especially in situations where a funeral insurance or policy is not enough), culturally driven, situations arise that force the low income groups to borrow from the low income groups as few have access to formalized credit. This puts further pressure on scarce and very limited resources and naturally impacts negatively on households and the market mechanism in general.

### **3.17 Conclusion**

The aim of this chapter was to establish the significance of the traditional South African religions as a determinant of consumer decision making which is a cornerstone of this assignment. South Africa is made up of eleven official languages and an infinite number of diverse cultures, but holistically speaking there is a common thread that runs through most. This thread is the belief in the Ancestral spirit, which actively partakes in our everyday life, and the respect we give relatives and friends in their daily lives, is the same respect and courtesy we extend to them when they die.

However, although the majority of the respondents did not respond positively to a culturally significant burials, the cultural beliefs remain strongly entrenched, and thus it is the determinate of consumer choice. It is this knowledge that drives the undertakers to set policies and instruments in place in order to establish pricing motivation. For example, Cremation is not seriously considered between the traditional South African cultural groups, even though the end cost to the consumer would be much less, than the fees that they are contributing towards the burial at this point in time. On the other side of the coin, consumer driven burial feasts, which places even a greater deal of pressure on consumers, policies, friends, relatives and societies are traditionally desired, but economically inappropriate.

In the analysis of the financing of these traditions, the motivation behind funeral policies become suspect, the majority of them been targeted at the low-income population groups where the possibility of error remains a matter of time. Coupled with the ever increasing influence of HIV/AIDS and the orphaning of dependents, makes this financial burden seem even more critical when approached holistically.

Financing of funerals is one issue that should not be taken lightly. The high rates of unemployment and huge social demands that are been placed on consumers, are forcing the majority to source funds from the sectors that already feel the financial strain of an economy experiencing the wake of slowing global trends. For example, the pressure placed on the savings of friends and relatives is of major economic concern.

Economically, it would be wise to challenge the traditional customs, and redirect the scarce resources that are been greatly miss-allocated into inappropriate sectors. Therefore, assisting in alleviating some of the economic burden or channeling funds back to the relatives or dependents that require those funds the most. Speculation regarding the burial policy along the lines of providing less burials and more for education, food and clothing funds.

**Chapter 4**  
**The Influence of HIV/AIDS and its Influence on**  
**the South African Coffin Industry.**



## **4.1 Introduction**

The aim of this chapter is to establish the economic impact that HIV/AIDS has on South Africa and the general influence of HIV/AIDS on the coffin industry.

South Africa's importance in this chapter should not be undermined, as the effects of HIV/AIDS on the South African economy and the overall effect that HIV/AIDS has on the South African coffin industry can be considered as a platform from which other countries may create policies or set benchmarks in dealing with the crisis.

## **4.2 The War on "HIV/AIDS"**

"Every day a child suffers and has to learn to fend for him or herself when a parent dies as a result of this disease. Every day, when someone, who is infected, dies, we lose a lifetime of skills and experiences; we suffer a blow to our economy that we have only just begun to rebuild. ... It kills those on whom our society relies to provide income through agriculture, mining, in factories, those who run our schools and our hospitals, and those who govern our towns and provinces. It worsens the poverty pervasive in our society when parents who are breadwinners die." These were the words President Thabo Mbeki used to address the South African population, on 1 December 1999.

In order to discuss the effects that HIV (Human Immuno-Deficiency Virus) and AIDS (Acquired Immuno Deficiency Syndrome) will play on the economy, we need a basic scientific understanding of the nature of the virus.

## **4.3 The structure of HIV and AIDS**

In 1981, The Center for Disease Control, in Atlanta Georgia in the USA, discovered a new disease syndrome, AIDS. This system is characterized by an impaired immune system, resulting in a number of opportunistic infections and cancer's, leading to brain damage resulting in dementia. It soon became clear that the virus was being spread through contact with blood, blood products and sexual contact (Caret et. al, 1993, pp. 488).

The virus responsible for AIDS is called HIV. What makes HIV different from other viruses is its unique ability to convert its single strand RNA into a DNA copy. That is, RNA (Ribonucleic Acid) converted through a multitasking enzyme called “Reverse Transcriptase” into a DNA (Deoxyribonucleic Acid), a molecular strand, which usually carries all of the genetic information of an organism. In all other organic cells, the RNA is formed from the DNA strand.

According to Caret, The HIV Reverse Transcriptase is a good target for antiviral chemotherapy because the inhibition of this reverse Transcriptase enzyme should kill the virus and have no effect on the human host. Such treatment includes the use of 3’azido2’,3’-dideoxythymidine, commonly called AZT, or Zidovudine. The AZT tests began in February 1986 and it was proved that AZT was effective, as the HIV virus preferred the AZT to the Thymide component within the host cells genetic DNA strand. (Caret et. al. 1993. pp. 582)



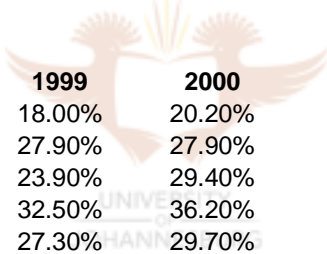
AZT was found to improve the quality of life of the patient, in some cases even prolong the life of the patients. But unfortunately, the new growing DNA chains of the bone marrow cells, responsible for the “birth” of the red and white blood cells, tended to incorporate AZT within the molecular chain. These cells begun to die, resulting in anemia and further depression of the immune system.

#### **4.4 The Geography of HIV/AIDS**

According to the UNAIDS (News Release No. 98/1513, November 1997), Sub Sahara Africa has the largest global share of HIV/AIDS. According to the Mail and Guardian, as of February 2002, global counts of fourteen and a half million people have contracted the disease. The worst affected countries are situated in a belt from Uganda, down to South Africa, spreading west as far as the Ivory Coast. (Whiteside, 1999). Similarly, over seventy percent of people living with HIV/AIDS live in Sub-Saharan Africa. (Nxumalo, 2001).

According to Kimberly Hensly, conference co-ordinator of the Harvard AIDS Institute, “half of all admissions at the Baragwanath-Chris Hani Hospital, the largest hospital in South Africa, are now HIV Positive”. Namibian deaths due to HIV/AIDS are twice as great as that of Malawi. Within Zimbabwe, an estimated 1.5 million people are infected, and over 700 die each week and Botswana is not much different. With half the population under 15 years of age, and HIV attacking those between 15 and 40, it is not clear how devastating the effect of HIV/AIDS will be. Unfortunately, lack of accurate data is a serious concern in (Southern) Africa. (Whiteside, 1999).

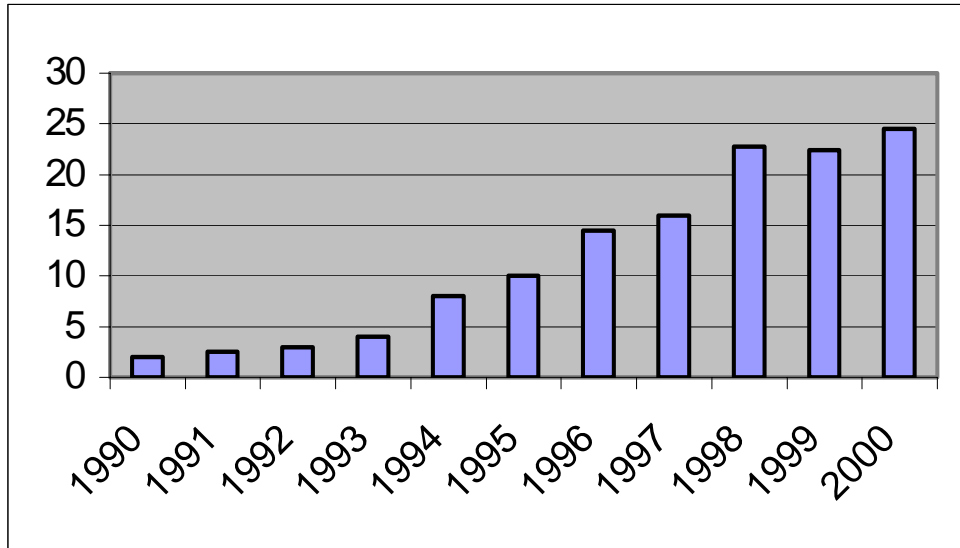
Within South Africa, KwaZulu Natal is by far the worst hit province affected by HIV/AIDS. Today, according to Whiteside, HIV infection for KwaZulu Natal and Swaziland, are is escalating at a rapid rate. (Whiteside, 1999). Within Gauteng, the government has earmarked 6.72 Billion Rands to tackle the mounting problem of HIV/AIDS. According to MEC Jabu Moleketi, HIV/AIDS has placed a great deal of economic strain on medical facilities. (Mothibeli, 2001)



| Province          | 1998   | 1999   | 2000   |
|-------------------|--------|--------|--------|
| Eastern Cape      | 15.90% | 18.00% | 20.20% |
| Free State        | 22.80% | 27.90% | 27.90% |
| Gauteng           | 22.50% | 23.90% | 29.40% |
| KwaZulu Natal     | 32.50% | 32.50% | 36.20% |
| Mpumalanga        | 30.00% | 27.30% | 29.70% |
| North West        | 21.30% | 23.00% | 22.90% |
| Northern Cape     | 9.90%  | 10.10% | 11.20% |
| Northern Province | 11.50% | 11.40% | 13.20% |
| Western Cape      | 5.20%  | 7.10%  | 8.70%  |
| South Africa      | 22.80% | 22.40% | 24.50% |

**Table 4.1 HIV infections among pregnant woman attending public clinics by province.**

(Source: Spratt, 2000 & Report National HIV and Syphilis Sero-Prevalence Survey, 2000)



**Figure 4.2 National HIV infections among pregnant woman attending public clinics since 1990.**

(Source: Report National HIV and Syphilis Sero-Prevalence Survey, 2000)

#### 4.5 HIV/AIDS and the Role of Women in the Economy

HIV/AIDS in women, is probably the most important issue concerning the impact of HIV/AIDS on our economy especially as the role of women is becoming increasingly more relevant in society. Woman today are constantly increasing their access to higher levels of education and especially with the breakdown of cultural historical discrimination. However, specific issues need additional attention regarding HIV/AIDS and women.

1. The Figures Used To Measure The Level Of HIV/AIDS. Up until now research data was predominantly based on pregnant women who were tested HIV Positive. Note that a very high percentage of women with HIV become infertile. (Spratt, 1999) Thus, the figures based on forecasting the true extent of the spread of HIV/AIDS over time will naturally be incorrect.
2. Women Contract HIV Easier Than Men Do. Researchers have found that subtype C, which has spread rapidly through Southern Africa, over the previous years, is

more easily transmissible through vaginal intercourse than any of the other HIV subtypes. (Hensle, 1999). Educating women through the cause and effects of HIV/AIDS, may be one of the greatest prophylactics against this epidemic. Rasnick mentions that woman are 7 to 8 times more prone to becoming infected through sexual contact than men become. (Rasnick, 2000, pp. 7).

3. Women Form A More Significant Social Role in Society. Cassen mentions that giving proper weight to the women's role is not only a matter of equity, but also a condition required for projects' success. (Cassen, 1994, pp. 235). This ties up with issues of point two. Furthermore, certain issues regarding the plight of women in rural areas needs to be addressed in order to reach the group of the population that are inaccessible via the normal channels of communication.
4. For Every 10 African Men Infected with HIV between 12 And 13 African Women Are Infected. South Africa has an estimated 200,000 HIV/AIDS orphans, and accordingly to Dr. Zola Skwiyi, 1.5 million children will have lost their mothers to HIV/AIDS by the year 2005. (Spratt, 2000). This in turn could lead to mass social instability within the traditional social structures. These children will grow up without the benefit of parental care, the lack of stable role models or stable family structures, etc. The other negative outcome is the cost burden placed on the state, not only care for these children, but also to educate and provide stable healthcare. There seems a large likelihood that the state will not be capable of providing these children with the skills required to becoming truly self-sufficient and competitive. This possibly will result in an increase in poverty due to their inability to find suitable employment and maybe even lead to an increase in crime as these children search for alternative modes of income.
5. More Women Are Responsible For The Running Or Heading Of Households Than Previously Recorded. They are fulfilling the role of breadwinner in rural areas, especially now with such high levels of unemployment and HIV/AIDS. (Meier, 1995 p 29). The historical trend, in rural areas, has seen the mass migration of workers to the urban centers in search of employment, particularly in the primary sectors, e.g. mining. Long separations from their partners promote the practice of having more than one sexual partner, increasing the danger of contracting



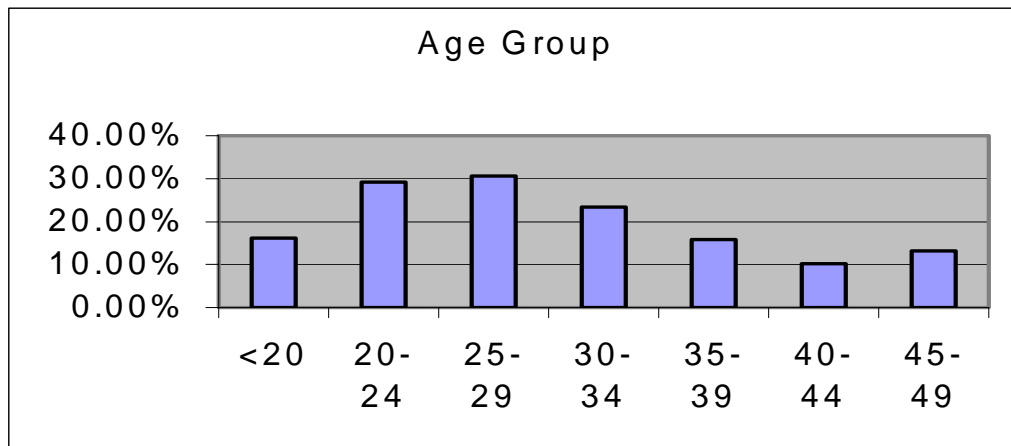
HIV/AIDS. (Hensle, 1999). This can result in not only a large spread of HIV/AIDS in the rural areas, but also puts pressure on the role of woman to look after the household, who may eventually not be able to rely on any form of partner support for income. This increasingly pushes families over the poverty line.

6. Women In The Less Developed Countries Are Especially Prone To Poverty. This is due to increasing discrimination against woman, either culturally, legally or economically. (Meier, 1995, p 29). With such high levels of historical and social discrimination, it may become even more difficult for women to find employment. With little social support, and the inflationary costs of living, families may find it more difficult to educate the young, and thus the cycle of low skills and poverty deprivation continues.

#### 4.6 The South African Labor Market and HIV / AIDS

The effect of HIV/AIDS on an economic system will be translated via the labor market. This is because HIV/AIDS affects human capital directly.

Of all the African Countries, South Africa is expected to bear the highest number of HIV/AIDS deaths by the year 2015, i.e. 7.3 million. Most of which are between the ages of 20 to 35 years. This means that within South Africa the largest portion of its productive workforce is under the direct threat of HIV/AIDS, and may experience a significant labor shortage before the year 2015. (Spratt, 2000).



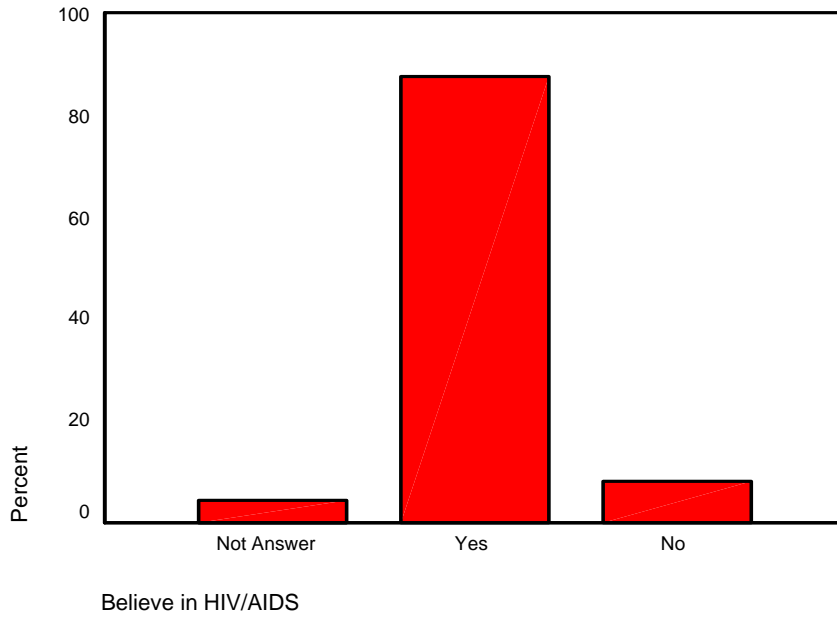
**Figure 4.3 National HIV infections by age group for 2000.**

*(Source: Report National HIV and Syphilis Sero-Prevalence Survey, 2000)*

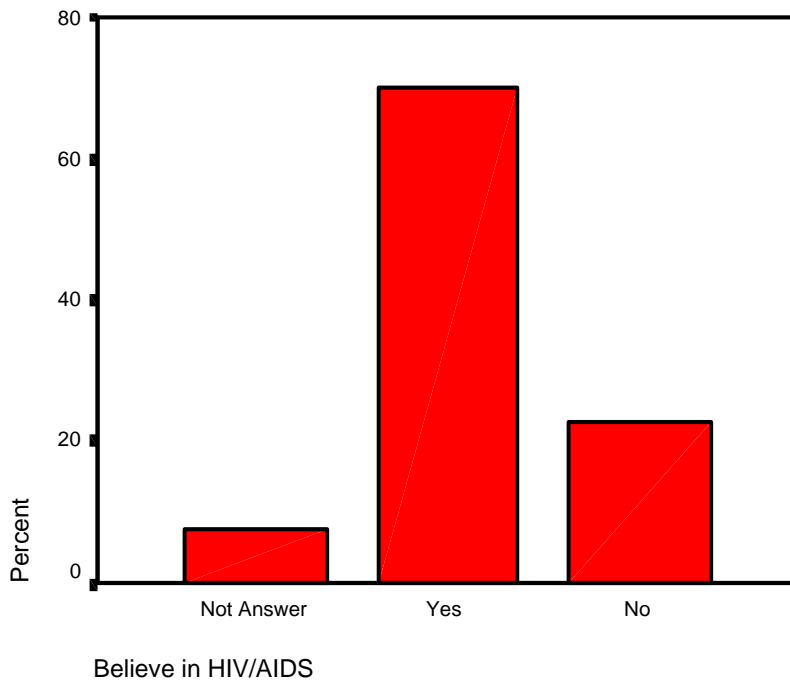
By the year 2006, it is estimated that HIV employees of Gold Fields Ltd., will cost the company \$15 (US) an ounce, on its annual gold production. (Murry, 2000). The mining sector is forecast as being the hardest hit by the HIV / AIDS virus, in both the short and the medium term. Manufacture, catering and agriculture will be the next worst hit industries. (Spratt, 2000)

The South African labor market, which is of major concern at this stage, will be strongly affected by HIV / AIDS. Skilled and highly skilled labor is estimated to be reduced by 21% and 12% respectively, around 2010. By 2006, the HIV infection rate is expected to peak. (Schlemmer, et.al., 1999). Employees living with HIV/AIDS not only have to deal with the stigma of living with a fatal disease, but also with the discrimination often associated with being affected. (Human Development Report, 1996, p 22).

A point of concern here is the degree to which HIV/AIDS awareness amongst the community influences the behavior of labor. From figure 4.4a and 4.4b, it is clear that only approximately ten percent of the sample population do not believe in the existence of HIV/AIDS. Therefore, within South Africa there is a large degree of awareness as to the existence of HIV/AIDS, however, although the large awareness exists, the number of affected people continues to grow. From the sample, when isolating the level of education to primary school, the level of awareness decreases within the sample from ninety percent to under eighty- percent. This labels the unskilled worker with a low education as been of high risk of been affected.



**Figure 4.4a: Percentage of respondents that believe in the existence of HIV/AIDS.**  
*Source: Baur, 2001, consumer survey.*

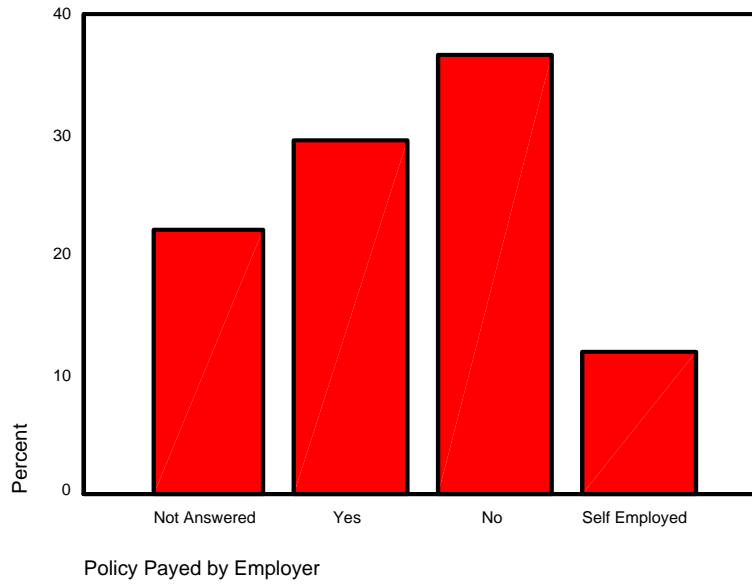


**Figure 4.4b: Percentage of respondents that believe in the existence of HIV/AIDS with a low education level.**  
*Source: Baur, 2001, consumer survey.*

#### 4.7 Costs of HIV/AIDS to the Employer

The effect of HIV/AIDS on the employer is not to be underestimated. The costs associated will include:

- ❖ Loss of productivity, the time lost when bringing up to speed new entrants into the production process. This includes training costs, the cost of acquainting the new employee with the skills required to do the job. The costs associated with loss of productivity of the person training the new employee.
- ❖ Recruitment costs, costs associated with acquiring new employees to do the job. This also varies as a function of skill. The cost associated with recruiting higher skilled employees tends to be proportionately higher.
- ❖ The loss of time, that is, it takes variable degrees of time to takes the employee to make employees productive depending on the job and the level of experience required.
- ❖ Medical costs. In most cases, HIV/AIDS does not act alone, for example, HIV/AIDS may become lethal if found in the presence of a common cold. However, in the period between contraction of HIV/AIDS and death, the effects of the other viruses, for example, bronchitis or malaria, can lead to heavy medical bills often at the expense of the state, medical aid schemes, employers, or the family of the sick individual.
- ❖ The employer is normally required to contribute towards the deceased employee's funeral costs, which can cause a severe financial burden to the employer. According to the results of the consumer survey, approximately 30% of the sample that are employed, reported that their employer contributed to a funeral insurance on their behave.



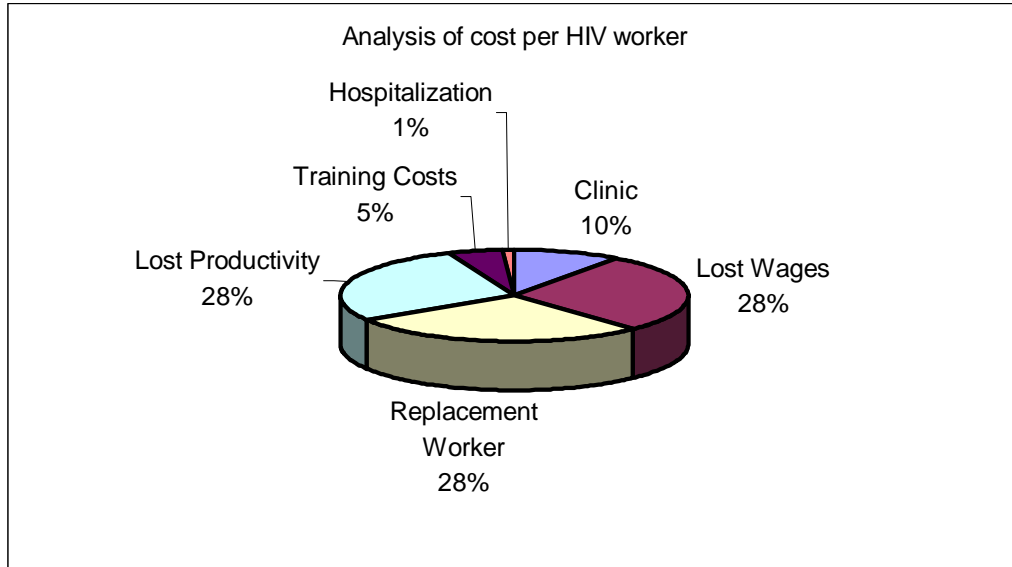
**Figure 4.5: Percentage employees whose employer contributes towards the funeral insurance or funeral policy.**

*(Source: Baur, 2001, Consumer Survey.)*



Associated with these costs are the effects of a low morale within the workforce, owing to the employee's who are aware of the eventual outcome of the disease they have contracted. These costs all detract from the final profits of the enterprise. In some cases, the costs may become so great that the employer becomes less price competitive in the market.

Within South Africa, in a survey conducted within the sugar mill industry, the cost per worker lost to the company, (for 1999-2000), amounted to approximately R8463.00 per year. These costs were primarily divided between replacement worker costs (R2328.00), lost wages (R2437.00), loss of productivity (R2350.00), training costs (R400.00), clinic visits (R846.00), hospitalization and follow up (R102.00) and lost wages (R2437.00). (Morris et.al. 2000, pp. 940-941).



**Figure 4.6a: Analysis of Cost per HIV Infected Worker.**  
 (Source: Morris et.al., 2000, p. 940.)

#### 4.8 Medical Bills Associated with the Epidemic

Much debate has been going on lately about the availability of cheaper medicine. This includes friction between Health Minister, Manto Tshabalala-Msimang and several pharmaceutical companies. The minister, declined an offer on 23 May 2000, to reduce the cost of anti-retroviral drugs by 80% to people with HIV/AIDS. Minister Manto Tshabalala-Msimang stated at a meeting for International Woman's Health Day on 28 May 2000, that the price of these drugs was still too high. By accepting the offer, Manto Tshabalala-Msimang, commented that the government would have to stop the treatment of other patients, thus concentrating solely on those with HIV/AIDS. (I-Net Bridge, Sapa, 2000).

According to a presentation by GlaxoWellcome to the Portfolio Committee on Health, the cheaper medicine is not the primary issue and mentions some basic premise:

- ❖ Many people living with HIV/AIDS do not have access to the anti-retroviral medicines. (The government is not interested in providing anti-retroviral, but rather concentrating on treating opportunistic infections. The main reason for this is that there is concern that the virus may become immune to the effects of the retroviral drugs if the course of treatment is not completed properly. Therefore, the costs

associated with the most effective distribution and treatment of the medication may become increasingly higher than generally anticipated.

- ❖ The disease will only be successfully managed in the presence of clear government led policies, adequate infrastructure, appropriate budgets and integrated programs.
- ❖ The treatment only compromises a small part of the costs of combating the disease. The other elements of treatment include diagnostic tests, counseling, medical and nursing costs, STD screening and the treatment of opportunistic infections.
- ❖ AZT is only one of nine anti-retroviral available in South Africa, and the least expensive. AZT is taken in combination with other drugs in a triple therapy treatment program. AZT proves to be only 17% of the overall costs.
- ❖ The mother-to-child treatment constitutes 30% of treatment cost or 0.2% of the national health budget. Therefore, it is considered an affordable and effective treatment in South Africa. (GlaxoWellcom, 2000, p 13-15).

The known drugs used in the fight of HIV/AIDS, including AZT and Nevirapine, are not used on their own, thereby drastically increasing the cost imposed on government. Nevertheless, these costs are grossly undermined. The pressure on the infrastructure, especially that of hospital services, training new and additional staff, etc., is underestimated and need to be considered as part of the overall calculation.

Another cost facing South Africa would include the cost of newly trained Medical Doctors. Bare in mind, a considerable cost is imposed on the state to train these people, who, in some cases, would choose to work in a foreign countries, away from the large numbers of high risk HIV/AIDS patients, characteristic in South African Hospitals.

#### **4.9 HIV/AIDS and the Economy, “Short Term Effects”**

The South African Health Ministry reports 5000 new HIV infections each month. (Hensle, 1999). HIV/AIDS is reducing life expectancy, increasing poverty and reversing development gains, according to the 1997 Human Development Report, presented by UNDP (United Nations Development Program). South Africa’s life expectancy has dropped from 63.2 years in 1996, to 54.7 years in 1999. Life expectancy is expected to decline to 40 by the year 2008. (Spratt, 2000). The HDI

(Human Development Index, which measures Life expectancy, Education and Income.), for Botswana has slipped back to 51 since 1996. (Gilchrist, 1999).

Research shows that the effects of HIV/AIDS will cost South Africa up to 0.4% per year in lost economic growth, due to lost savings of consumers, result of the lost breadwinners, increased medical spending and loss of skilled manpower. This translates into 200 million Rands per working day by 2015. (Finance week, 21 April 2000).

According to a case study presented by ESCOM, the major areas where the epidemic will influence companies will be:

- ❖ Loss of productivity, absenteeism, and the loss of skilled and trained employees.
- ❖ As the epidemic progresses, the death of the employees will have a further impact on productivity.
- ❖ The impact on employees benefits, especially group life cover, disability, pensions and medical insurance may be significant.
- ❖ The rising health-care costs, and additional psychological support.

ESCOM estimated that the overall direct cost could increase to 15% of the payroll by 2005, onwards. The effects on other firms are defined by both increasing expenditure and reducing revenues. Expenditure includes health care costs, burial fees, training, and recruitment of employees. Revenues decrease through absenteeism, due to illness, attendance at funerals, and time spent on training. Labor turnover leads to lower productivity through lower experience. Case studies involving Kenya and Botswana showed that the increase in labor costs were associated with absenteeism and increased burial costs, directly because of HIV/AIDS. (ESKOM, 1999).

Similar effects are experienced in neighboring countries, such as Zimbabwe, Botswana, Mozambique and Namibia, etc. This could have grim consequences for both South Africa and the rest of SADC, lowering its potential of becoming a stable trade block.



In an impact study by the Anglo-American Corporation, due to an increase in payouts, a decrease in the benefits from life insurance schemes, medical insurance schemes and funeral assistance programs could result. This in turn could lead to further downward pressure on domestic savings, which South Africa is in short supply of at this stage.

Decrease in productivity through increase in absenteeism, due to caring for sick family members. Fatigue, psychological, physiological manifestations, resulting due to increased accidents due to inexperience, resulting from high turnover of workers. (Crisp, 1999).

An impact on the community in turn will affect the productivity of business. Examples of this include a doubling of absenteeism and the increase in tuberculosis in some of the Anglo-American mining companies. The insurance industry has indicated that the cost of providing insurance benefits will increase from 7% to 19% of the payroll. One Medical Aid scheme calculated that the reserves will have to be increased from R124 million to R547 million in order to compensate for HIV/AIDS. (Crisp, 1999).

The effects of loss of productivity and lower savings through higher costs associated with medical aid schemes, funeral policies and pension funds, translate into a lower national growth for the economy. The increasing production costs make the local industry less competitive in both local and foreign markets. This puts downward pressure on the value of the local currency (Rand), higher exchange rates, and a further decrease in comparative competitiveness.

If the government continues to use interest rate hikes to control the exchange rate pressure, this could lead to a very unstable macroeconomic condition for the economy. The benefits of a stable fiscal policy might improve the conditions for FDI (foreign direct investment) and the establishment of new local businesses, to fill the gap that HIV/AIDS has created. Furthermore, this approach might help lift more people out of poverty, easing the poverty burden of the state. This will put the population under threat, into a position to help itself combat the adverse effects of the HIV/AIDS epidemic.

#### **4.10 Hypothesis: HIV/AIDS on the Economy, “Medium Term Effects”**

The effects of HIV/AIDS long term are not quite in our forecasting ability yet, for several reasons:

1. The data concerning the true nature of the cause and effects of HIV/AIDS is still very much in dispute. The virus is also known to mutate. The methods of contracting the virus in the long term may change. It is not hard to believe that HIV might become airborne. (An example here, is the spread of HIV/AIDS via the hypodermic needle, preferred by most drug addicts. This is possible, then at a later stage maybe even the common mosquito may be capable of carrying the virus for some time, such as in the transport of the malaria parasite.). Furthermore, we may not find an effective cure and adequately distribute it within the next ten to fifteen years.
2. The demographics of HIV/AIDS are weak, as most data is based on census information, available on average once every five years. Exact data of the effects of HIV/AIDS in rural areas is poor, and based on hospital records. Furthermore, not everybody has access to hospital treatment.
3. The figures used in forecasting have not been based on pregnant women, and it is found that HIV/AIDS makes most women infertile, thus the figures may be grossly under exaggerated.

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Therefore, I shall focus my hypothesis on the medium term effects. This hypothesis is rooted on the spread of skilled, versus unskilled labor, the primary, secondary and tertiary sectors of the economy.

The labor market traditionally comprises of highly skilled, skilled and unskilled labor. They are then distributed into the primary sector, secondary sector and tertiary sectors of the economy. Levels of unemployment according to the IMF are approximately 40% of the population. According to the data from the October Household Survey, unemployment in SA rose from 32% in 1994, to 38% in 1997. (Nattrass, 2000, p 2).

The combination of the lower economic growth and increasing population resulted in a lowering of the labor absorption capacity of the economy. (Barker, 1995, p 64). Those that are not absorbed into the formal sectors are absorbed into the informal sectors. South Africa's informal sector is growing at an alarming rate.

An important note needs to be included at this point. According to Borat, there has been a significant structural shift in labor demand. A gradual decline of labor requirements was evident in the primary sectors i.e. mining. A decline in the demand for skilled and unskilled labor was clear in agriculture, fishing and forestry. Through rapid mechanization, this demand for labor was sped up. The secondary sectors such as manufacturing also felt a decline in labor demand, a condition accelerated by falling exchange rates and globalization. The service sector saw a decline in the unskilled labor but and increases in skilled labor demand, i.e. professionals and management staff. (Bhorat et. al. 1999, pp. 348-349).

In the medium term an increasing capital intensity and rapidly increasing use of high level technology, led towards a call for highly skilled workers and a lower demand or rejection of unskilled workers. The occupations with the highest growth include highly skilled professionals and the management groups by 265% and 269.7% respectively. (Bhorat et al. 1999 p 363).

Thus, the effects of HIV/AIDS passed into the economy are through a transmission mechanism via the labor market. The unskilled labor market is going to be hit the hardest by HIV, but the pool of unskilled workers, accommodated by free movement across borders will rapidly fill the gap, assuming of course, that both training costs and the loss of productivity is minimized by the rapid replacement of new labor.

The effects on skilled labor will be a little more of a concern, but again, a draw on the vast free unemployed labor pool will fill the gap. In this instance, loss of productivity is more expensive. The effects will be dampened by the lower number of skilled workers hit by the virus, due to higher awareness through higher education, etc. The greatest loss though will be on levels of experience, which is immeasurable in capital terms.

The initial effects of high costs on the industry will be very high, including medical costs, funeral costs, loss of competitiveness, etc. However, in the medium term the industry will adjust and become wiser in methods of dealing with the epidemic. Included, would be higher levels of capital intensifying, i.e. more machines to do the

work. However, the skilled labor displaced by the capital deepening, will be absorbed again in other sectors of the economy.

A corner stone in this hypothesis is the exponential growth of technology. As fast as new technology becomes available on the market, so it becomes outdated, and is rapidly replaced by a newer state of the art technological system. Thus, the experience of the skilled labor becomes less important than the knowledge of the new technology. This is especially relevant in today's IT industry.

The capital deepening will lead to a higher demand for skilled labor. These people who acquire the new skills, by virtue of their demand and skill, will receive a higher wage, and improve the quality of their lives and the lives of those around them. This in turn might assist in protecting them from the virus through awareness, more than anything else.

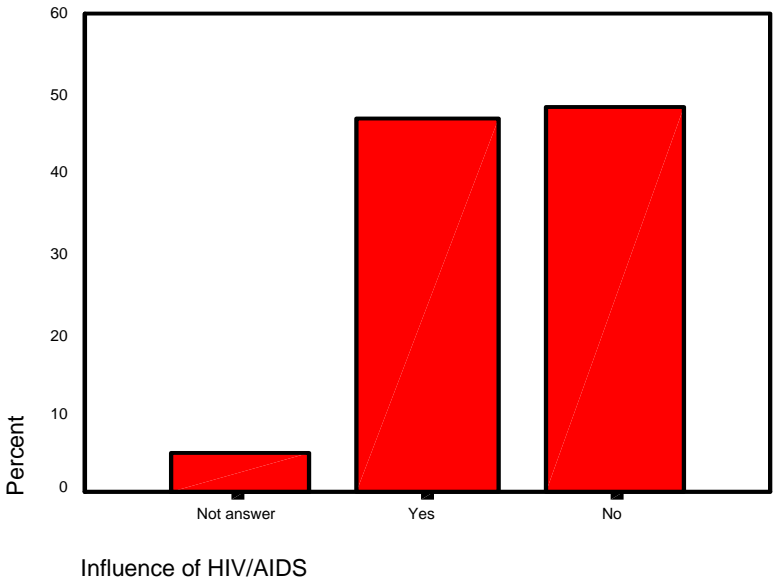
In the medium to long term HIV/AIDS may not necessarily have the devastating effect on the economy as has been previously predicted. Mechanization, modern training techniques and education for semi-skilled labor forces will replace the labor-intensive operations. Due to the massive unemployment pool in Sub-Saharan Africa, vacancies caused by the pandemic can be accessed.

#### **4.11 HIV/AIDS and the Coffin Industry**

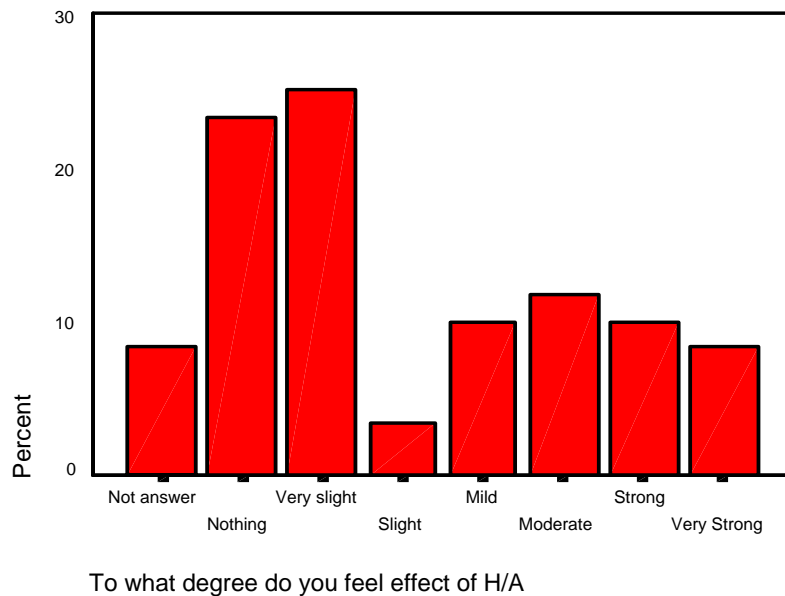
The influence of HIV/AIDS on the coffin industry is generalized and speculative. Several factors account for this:

- The numbers of deaths due to HIV/AIDS are very few. In most cases, the patient may die from a combination of AIDS and Cholera, Malaria, Tuberculosis, etc. Despite HIV/AIDS often been referred to as the sliming sickness and is a contributing factor to death within the community, it is normally not reported as the main cause of death.
- The discrimination associated with the pandemic among certain cultures may result in some people not disclosing the true cause of death.

Many undertakers do not wish to be associated with the paradigm that HIV/AIDS may be “good for business”, and most likely undermine the true effect that it has on their business, either positive or negative. This point is extremely important as the interpretation can lead either way. From figure 4.6b, the response to whether or not HIV/AIDS has an effect on business, resulted in a 50/50 response. Therefore, the analysis can be seen as; yes there is the influence of HIV/AIDS in the country and it does increase the rate of mortality, but, there are additional undertakers entering the market resulting in greater competition, and therefore business does not improve but may become more difficult. In many of the interviews with undertakers, it was mentioned that the number of people been buried by any particular undertaker did not increase, but the age of those been buried was becoming younger. Of those who experienced a positive response to the influence of HIV/AIDS, when asked to explain the effect that HIV/AIDS has on sales, the response rate was greatest from “nothing to very slight” categories. See figure 4.7. This combined with increasing death rates prevalent in SA, which makes it highly probable that there are a large number of new players entering the market.



**Figure 4.6b: Percentage undertakers whose businesses feel the influence of HIV/AIDS. (Source: Baur, 2001, Undertakers Survey.)**



**Figure 4.7: Degree of influence that HIV/AIDS has on market sales.**  
 (Source: Baur, 2001, Undertakers Survey.)



#### 4.12 The Marketing Mechanism

The structure of the coffin industry approaches a perfectly competitive market structure. In order to put this proposition into perspective, I have decided to briefly review a perfectly competitive market mechanism.

Under perfect competition, according to Salvatore, there is perfect mobility of resources. That is, workers and other inputs can easily move geographically from one job to another and can respond quickly to monetary incentives. No input required in the production of the final product or service can be monopolized by its owners or producers. In the long run, firms can enter or leave the industry with little difficulty. There are no patents or copyrights. Large amounts of capital are not necessary to enter the market, and existing firms do not have a lasting cost advantage because of experience or size. (Salvatore, 1998, pp. 366-367).

The coffin industry exhibits these basic traits, however, the market is far from perfectly competitive, (as what would probably be expected in the case of the stock market). Reasons for this include; perfect knowledge of future prices, costs and economic advantages. There are few undertakers and producers who have a perfect knowledge of the future outcome of the market. In the case of the more established businesses, greater market awareness exists, and that contributes towards the business survival. However, many of the undertaker businesses have only grown recently, and a “*feel*” for the market may not yet have developed.

Another point, which directs the industry away from the perfect competition hypothesis, is the existence of a single price, which may develop, through supply and demand. Within the coffin industry, prices are supply demand driven, however the price range varies considerably inter-industry, dependent on the individual undertakers who operate under different cost structures. This ties up with an awareness just on how much to produce, but as the industry appears to be demand driven, prices can fluctuate with supply availability, but a large degree of uncertainty exists as to exact future requirements.

#### **4.13 Competition in the Coffin Industry**

In order to fit the *approaching perfect competition* hypothesis to the coffin industry, lets analyze the basic premise of the previously mentioned criteria to the coffin industry:

1. Perfect mobility of resources. Skilled labors within the industry have the ability to move from one company to another. The distributions of undertakers geographically appear to be rather evenly distributed around communities, despite larger centers have larger concentrations of undertakers, which is demand driven. There are no restrictions on the flow of skills from one business to another. Similarly, input resources such as wood, fiberboard, chipboard, super-board, glue, nails, paint, fittings, flowers etc. are not monopolized. Within those industries, a large degree of competition exists, despite the overwhelming presence of Sappi, one of South Africa’s largest wood and paper producers.

2. In the long run, firms may enter and leave the industry without much difficulty. This is strongly evident in the large numbers of undertakers that are constantly entering and exiting the market. For example, according to Mathanda, within the Soweto area, over 54 funeral parlors are in existence and more are establishing themselves daily. The initial costs of beginning an undertaker business are reasonably low, with the highest input cost being the hearse and a body storage facility. Both of which can be produced locally. (Normally a hearse is constructed by converting a second-hand Mercedes 280s.) Similarly, exiting the market is not a big affair, provided funeral insurance's are underwritten and can be transferred to another company.
3. Patents and copyrights. There are few copyrights for coffin manufacture, and a large percentage of the undertaker's produce their own coffins. Within South Africa, the South African Bureau of Standards (SABS) have set certain criteria to which these coffins are produced, but there is a large degree of freedom in the production of the coffins.

Existing firms do not have a lasting cost advantage over new entrants. Similarly, many of the new entrants have lower running costs than larger companies, and despite the existence of tough competition to get established, after a period of time the new entrants are highly competitive in their own right. During the interviews with the undertakers, the establishment of new smaller companies, often referred to as the "fly-by-night" enterprises, caused a great degree of price conflict, and were reportedly responsible for shaming the reputation of the undertaker community.

From these points it becomes clear that the coffin industry exhibits near perfect competition, however, confirming issues become relevant when analyzing the data from the undertaker survey.

#### **4.14 Pricing Strategy in the Coffin Industry**

The pricing strategy in a competitive market is based on supply and demand. Factors can influence either the supply or the demand and thus the decision-making behavior of



the producer, retailer (undertaker) or consumer. Factors that influence the demand for a coffin, from any choice of undertakers include:

1. The cultural aspects; Is the consumer culturally consciences, and therefore the choice will be religiously determined. Therefore, in certain African cultures, cremation is out of the question, and the coffin is required to be a show respect and love for the deceased. In this case, the coffin may need to be visually pleasing, whereas for cremation purposes, a rented coffin may be a more suitable choice. In the case of the Jewish burial, the coffin is constructed to form a very plain pine “standardized” box, and therefore influences price decisions differently from other African traditionally acceptable burials.
2. The influence of HIV/AIDS naturally increases consumer demand, putting upward pressure on prices.
3. The income of the consumer, if the culture dictates, will determine the amount spent on the coffin, in many cases, the higher the income, the more elaborate the funeral may be.

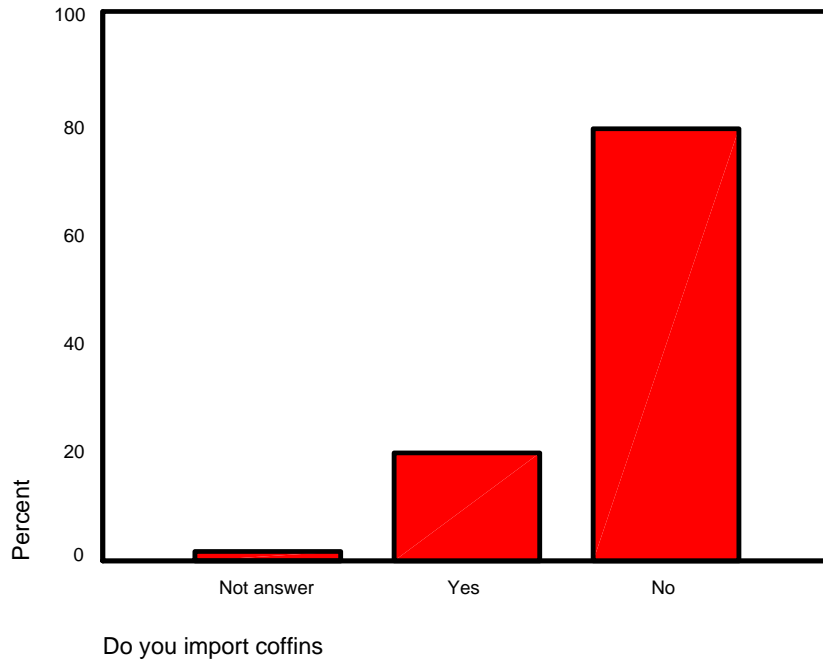
However, as discussed previously, the existence of a funeral policy influences the consumer choice. According to the undertaker survey, approximately 80 percent of the consumers have a large degree of decision-making ability and the policy seldom dictates the type of coffin or services chosen by the consumer. (Baur, 2001, Undertaker survey).

Services offered by the undertaker are an influential characteristic of consumer demand. Approximately only 45 percent of the undertakers maintained that the services offered were different. Of the remaining 55 percent, the interviewees maintained that the services may be similar, but the manner in which the service is offered determines the consumer satisfaction.

The cost of the coffin or undertaker plays another leading role in consumer demand. Approximately 55 percent of the undertakers interviewed maintained that their prices were cheaper than most others. This is important, as even in the case of a policy or insurance holder, where the consumer has a large degree decision making ability, the cost of the coffin is a serious determinant of demand. This would only be possible in the case of near perfect competition.

The supply of coffins are influenced by several factors, these include:

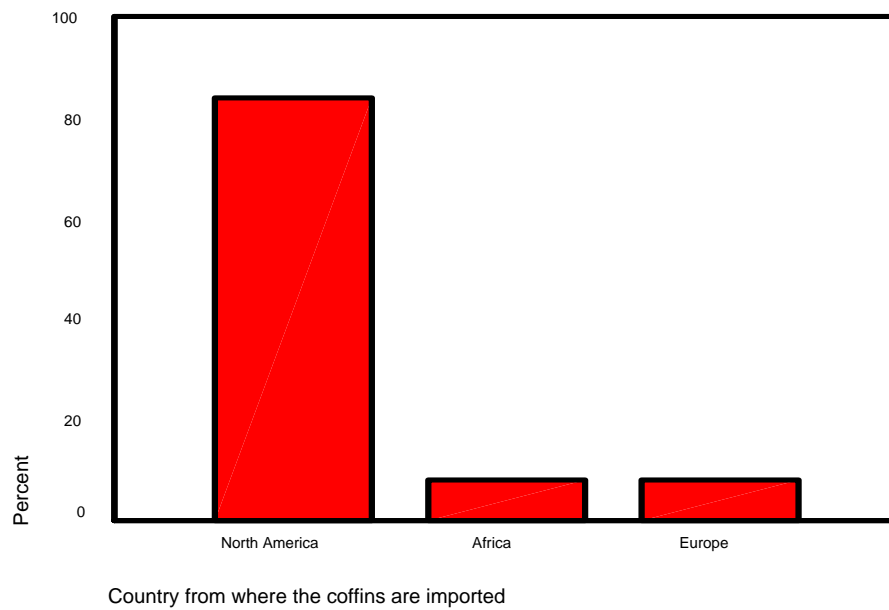
- Raw materials. Most of the products used in the production of coffins have a wood derivative, with the exception of metal caskets (aluminum, steel, zinc, etc), fiberglass coffins and in some cases a plastic derivative. Wood derivatives, of which the consumer survey detected a 90 percent of consumer choice, include; pressboard, super-board, chipboard, fiberboard (cardboard), or solid timber. Most of the wood derivatives have a vinyl outer coat, to give it that authentic look. Therefore, the supply side of coffins is strongly related to the price of wood or more directly, the wood and paper industry. At present, the exchange rate situation, compounded with inflationary pressures, coupled with favorable exports, should cause wood prices to rise. Therefore, it should have serious consequences for the coffin industry, namely upward price strategies, putting pressure on consumer savings, investments, etc.
- Imports. The production of coffins in South Africa is relatively well developed. Within South Africa, the cost to manufacture a coffin is favorable, compared to the foreign imported varieties. Reasons for this include, high exchange rate, adverse geographic location, low relative costs of resources in the production process, matured consumer tastes and preferences, all of which also play a large role in price competitiveness of the local industry. From the undertaker survey (see figure 4.8), only approximately 20 percent of the undertakers reported that they imported coffins. However, the imported coffins were normally highly “specialized” type models, which fell into the very high price range.



**Figure 4.8 Percentage Undertakers who Import their Coffins**

Source: Baur, Undertaker survey, 2001

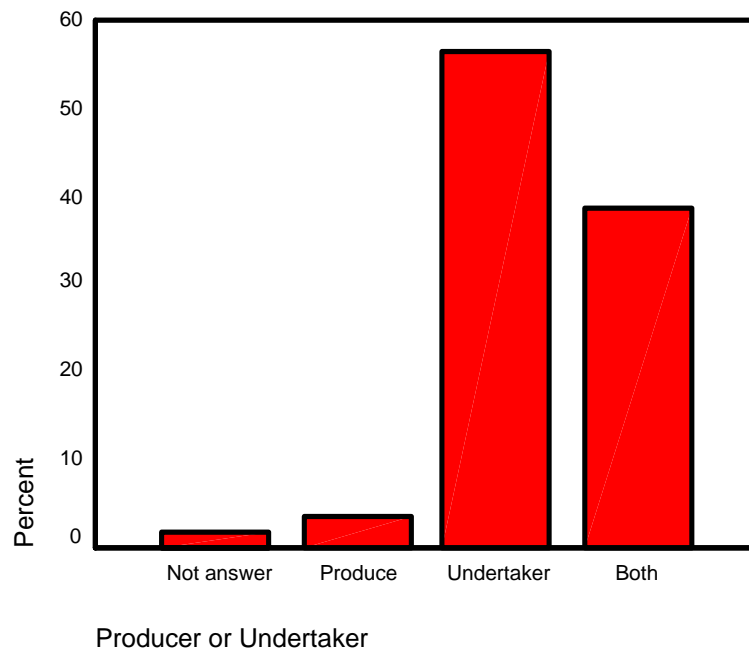
The coffins imported came from three main destinations. 80 percent from North America, (North America is characteristic of a well-developed specialized undertaker industry, large production houses, and many established undertaker associations), and the remaining imports been distributed evenly between Africa and Europe. (see figure 4.9).



**Figure 4.9: Coffin Imports via Geographic region.**  
 (Source: Baur, 2001, Undertaker Survey)

Despite the advancement of the coffin industry in places like, for example, North America, with the current exchange rate scenario, low production and low resource costs, and high level of production experience that the South African coffin industry has at this point in time, (that is, South Africa possesses in more ways than one a high competitive advantage over many off-shore produces) it is very likely that the export of coffins into other geographic regions may see growth. In some of the interviews with the undertakers during the undertaker survey, a certain amount of interest was expressed regarding the coffin export market, especially into a developing African market.

The number of producers; This influences the supply of coffins, dependent on the level of competition, geographic proximity to the market, availability of resources, availability of capital, availability of skills that are required in the production facility, all influence the supply of coffins into the market.



**Figure 4.10: Produce, retail or both.**  
 (Source: Baur, 2001, Undertaker Survey)

See figure 4.10: Coffin retailers are more in number than coffin producers, however, a large group of the coffin retailers, approximately 40 percent, actually manufactures coffins too, and only a very small number of the respondents captured in this survey reported only production. It would be easy to rule out the means of production, as a determinate factor of supply, as costs associated with the manufacture of the standard coffin, is in many cases negligible. The value of this statement could mean that the demand for coffins is possibly greater than the supply. Therefore, many undertakers have resorted to producing their own stock to match demand. Examples of such a practice include the AVBOB Corporation, which have a central production house and distribute the coffins to its sister companies. However, these coffins are not only produced for in-house sale only, but also for sale (under the brand name Omega) to other undertaker companies.

The availability of burial space: This is a growing concern among the local authorities within South Africa. 40 percent of the respondents in the undertaker survey reported that there is a growing problem concerning the availability of burial space. According to Johnson, Burial space anticipated sufficient until 2050, is expected to be full by 2010. Possible reasons for this included:

1. HIV/AIDS related deaths, causing an unanticipated increase in deaths, not planned for several years ago.
2. Unanticipated movement of people, from rural to urban, causing upward pressure on limited burial space in towns and cities.
3. Socioeconomic factors, such as worsening living conditions due to low real incomes, the growth of informal settlements and the flood of people from rural areas, (similar to point 2), puts pressure on local urban cemeteries.
4. Financial strain on local government, making the purchase of local property difficult. The correct characteristics, (for example, distance from residential centers, the impact on ground water, the depth and condition of soil, etc.) required for cemetery land, makes it very expensive to purchase and maintain.

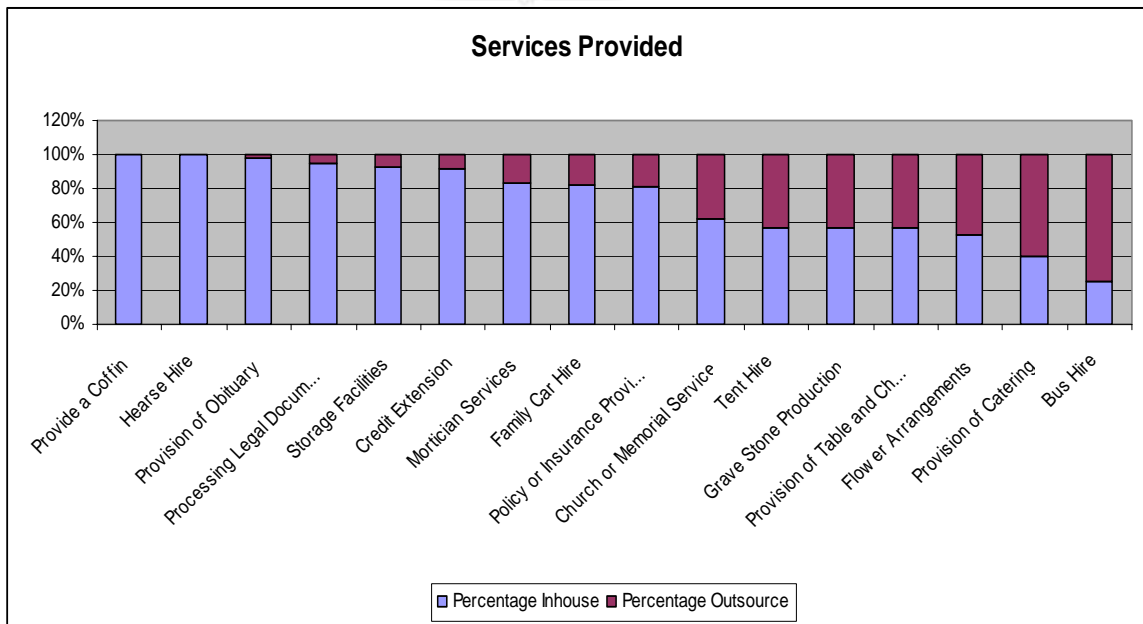
Naturally the growth of private cemeteries are beneficial as it alleviates some of the state burden, however, the cost of burial in those new cemeteries is somewhat more expensive than in the local counterpart. Therefore, these cemeteries are out of reach for the standard income family, and places additional influence on the supply side factors.

#### **4.15 Other Businesses Influenced by the Coffin Industry**

The coffin industry is not a stand-alone entity and is to a very large degree associated with many other complimentary industries that deserve a small degree of mention in this analysis. (see Table 4.11)

| Services Provided              | Percentage In-house | Percentage Outsource |
|--------------------------------|---------------------|----------------------|
| Provide a Coffin               | 100%                | 0%                   |
| Hearse Hire                    | 100%                | 0%                   |
| Provision of Obituary          | 98%                 | 2%                   |
| Processing Legal Documentation | 95%                 | 5%                   |
| Storage Facilities             | 93%                 | 7%                   |
| Credit Extension               | 92%                 | 8%                   |
| Mortician Services             | 83%                 | 17%                  |
| Family Car Hire                | 82%                 | 18%                  |
| Policy or Insurance Provision  | 81%                 | 19%                  |
| Church or Memorial Service     | 62%                 | 38%                  |
| Tent Hire                      | 57%                 | 43%                  |
| Grave Stone Production         | 57%                 | 43%                  |
| Provision of Table and Chairs  | 57%                 | 43%                  |
| Flower Arrangements            | 53%                 | 47%                  |
| Provision of Catering          | 40%                 | 60%                  |
| Bus Hire                       | 25%                 | 75%                  |

**Table 4.11: Additional Businesses directly related to the Coffin Industry.**  
(Source: Baur, 2001, Undertaker Survey.)



**Figure 4.12: Additional Businesses directly related to the Coffin Industry.**  
(Source: Baur, 2001, Undertaker Survey.)

Economically spoken, it becomes clear when looking at the data summarized in figure 4.11, that the coffin industry is by no means a stand-alone industry. Infinite number of small complimentary businesses support consumer demand via the services that the undertakers or producers cannot supply or do not find it cost effective in order to establish additional departments in order to fulfil these functions.

For example, from figure 4.11, the provision of a coffin and a hearse are essential requirements for the provision of an undertaking business. This is despite my concern that the newer entrants in the market might prefer to hire a hearse from another undertaker in the case of a funeral (due to high purchase cost of these cars). However, this critical question which was captured by the survey, is, do the majority of the undertakers feel that the hearse is an extremely important part of the business? Therefore, an undertaker does not commence business without the availability of his or her own hearse. So additional to the coffin industry, is the development of motor shops, which convert second hand Mercedes 280s cars into Mercedes hearses or family cars (a Type of limousine).

This is an extremely cost effective solution which is provided as a alternative to the import of an equivalent foreign model, at these currently escalating exchange rates. Additional industries have developed surrounding alternatives to the hearse, this include, among other things, the provision of a display trailer which is towed behind a normal car, bus, taxi etc., that may serve as a substitute to the hearse.

Other important industries that compliment the coffin industry include, the flower industry, catering industry, bus and limousine (family car) hire, grave stone production, credit extension and funeral policy (normally underwritten) insurance's, etc. These complimentary industries are extremely beneficial for the economy, contributing towards job creation, and contribute towards stimulating economic growth, (be-it on a very small scale). Furthermore, the distribution of income away from the core of the coffin industry is beneficial as it may lead to a greater distribution and allocation of funds within the economy.



From an entrepreneurial standpoint, there is no level to the degree of creativeness that stimulates the economic environment. For example, the maintenance and care of graves belonging to loved ones, is an example of such successful entrepreneurial creativeness.

#### **4.16 Conclusion**

The aim of this chapter was to illustrate the impact of HIV/AIDS on the South African coffin industry. Every day, thousands of people become infected, resulting in the mass destruction of physical and intellectual capital. The consequences on the country are far from realized, however, the consensus is that there is a great loss of economic potential that may have put South Africa in an unsafe position with regard to investor confidence and global economic trends.

The South African coffin industry is without any doubt, influenced by the negative consequences of HIV/AIDS. However, the amplitude and length of the influence of the HIV/AIDS pandemic is strongly subjective to environmental, geographical, social and cultural characteristics.

Within the coffin industry, there is strong evidence of a near perfect competitive market structure. This includes the players ability to freely enter and leave the market, the low initial start up costs of new enterprises, the inability of competitors to block new rivals using monopolistic pricing strategies or copyrights, near perfect mobility of resources and labor and the inability of established firms to keep the rivals out of the market based on size and experience. However, the growth in the complimentary industries must not be underestimated, as this provides a springboard for these industries to enter the market, converting scarce resources and services into viable profit incentives. Similarly, the distribution of capital resources are distributed more widely than would alternatively have happened if these industries had not developed or an oligopolistic marker structure was to exist within the coffin industry.

South Africa is the global test zone, regarding the effect of HIV/AIDS and the consequences it has on the economy. The importance that the industry plays in this regard should not be neglected, as the influence effects and consequences that South

Africa may experience, can be used to create policy and measures to protect other countries from the wake of such a pandemic.



**Chapter 5**  
**Quantitative Model Illustrating the Influence of**  
**HIV/AIDS and Competition on Price Setting**  
**Behavior**



## 5.1 Introduction

The aim of this chapter is to analyze the relationship between certain variables in the market economy that may be relevant to the price setting behavior experienced within certain sectors of the South African coffin industry, will be analyzed.

There are many influences that may cause fluctuations in coffin pricing. However only two factors have a remarkable significant influence, these include specifically the influence of HIV/AIDS on mortality rates, thus a demand driving factor. The other is the influence of competition within the South African economy.

This model attempts to map the influences on the dependent variable, namely price of coffins, and the relationship between the independent variables within the constraints of this model.

### A Quantitative Model Using HIV/AIDS

## 5.2 Specification:

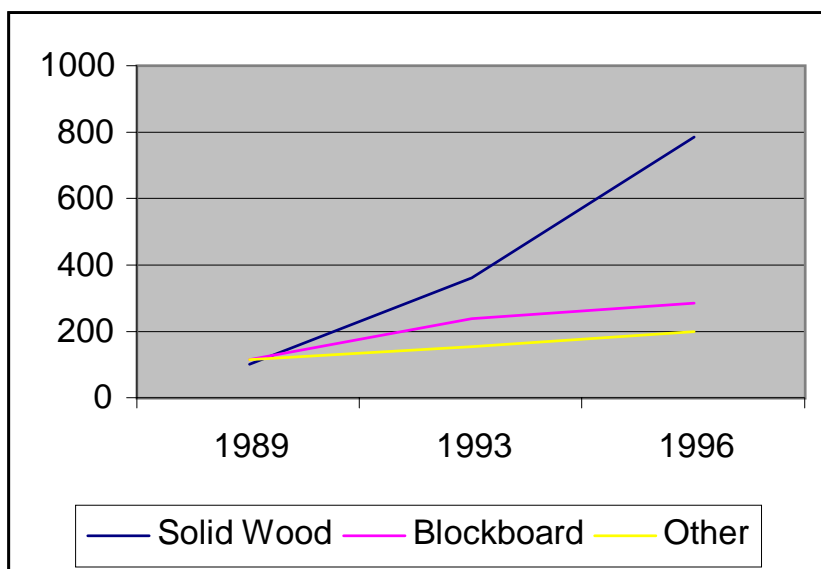
### 5.2.1 Choice of Variables in the Model

This model hopes to show the relationship between price, the dependent variable and HIV/AIDS the independent variable.

### 5.2.2 Dependent Variable

P = Price of Coffin

Prices for coffins range from one extreme to another. The price set for most coffins is dependent on construction material, shape, color, internal and external finish, the availability of imported or local substitute products, and the costing structure used by any specific coffin producer.



**Figure 5.1: Average Price of Coffins, 1989, 1993 and 1996**  
(Source: Statistics South Africa, 1989 & 1996)

| Q    | Solid Wood | Block board | Other |
|------|------------|-------------|-------|
| 1989 | 39         | 75          | 83    |
| 1993 | 50         | 76          | 74    |
| 1996 | 26         | 95          | 69    |

| P    | Solid Wood | Block board | Other |
|------|------------|-------------|-------|
| 1989 | 3868       | 8818        | 9791  |
| 1993 | 17964      | 18342       | 11332 |
| 1996 | 20473      | 26676       | 13771 |

| P/Q  | Solid Wood  | Block board | Other    |
|------|-------------|-------------|----------|
| 1989 | 99.17948718 | 117.573333  | 117.9639 |
| 1993 | 359.28      | 241.342105  | 153.1351 |
| 1996 | 787.4230769 | 280.8       | 199.5797 |

**Table 5.2: Average Price of Coffins, 1989, 1993 and 1996**  
(Source: Statistics South Africa, 1989 & 1996)

When choosing a coffin on which to base the price estimate, I chose to use the standard block board model for several reasons. These included:

- The quantities of block-board coffins sold according to Statistics South Africa grew much more than any of the other versions.
- The research conducted with the consumers and the undertakers led to the conclude that the majority of the coffins sold to the average consumer were normally constructed from block board. Block board covers several categories, including pressboard, chipboard, or super-board. However, due to the construction technique, many of the consumers interviewed in the consumer survey where under the impression that the coffin was constructed from solid wood. This impression is justified as the finish of any coffin gives the impression of a wood finish. Furthermore, a lack of understanding by the consumer as to the composition of the block-board coffin may further add to this impression, therefore, the price of manufacturing block boards coffin as the dependant variable was chosen.
- The use of manufacturing cost was designed to avoid the large variation of markup and additional service costs that are largely dependent on the consumer needs and undertaker services provided.

Statistics South Africa where able to provide the closest proxy of price for 1989, 1993 and 1996. However, in order to establish a price of an average coffin produced in 2001, a complete coffin was constructed, using chipboard. This came to R350.00, as per costing below.

## Costing

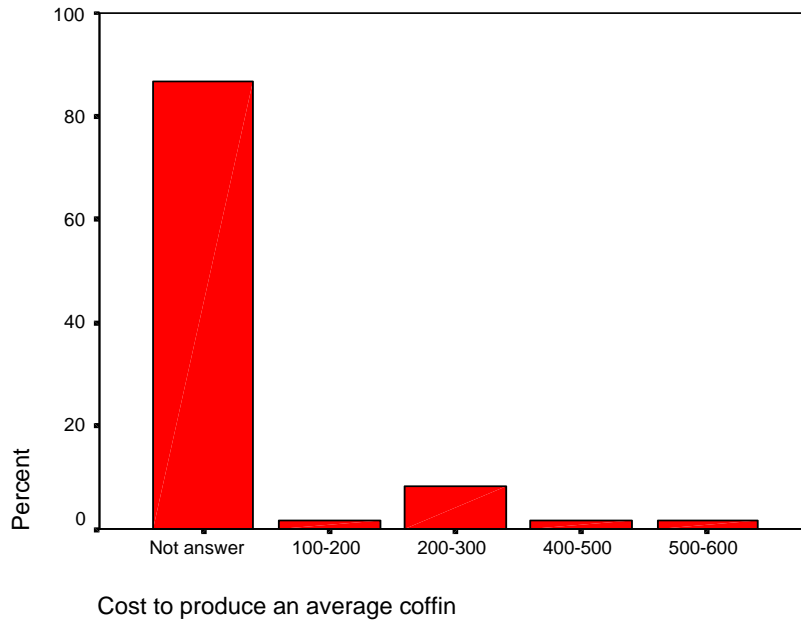
The costing is based on the manufacture of three coffins

3 coffins require 2 sheets of board.

| Wood Costs           | 2 Sheets               | Unit P   | Total P           | Cumul. P        |
|----------------------|------------------------|----------|-------------------|-----------------|
|                      | Base board             | R 130.00 | R 130.00          | R 130.00        |
|                      | Foiled board           | R 250.00 | R 500.00          | R 630.00        |
| <b>Fittings</b>      |                        |          |                   |                 |
|                      | Handles & Decorations  | R 60.00  | R 180.00          | R 810.00        |
| <b>Accessories</b>   |                        |          |                   |                 |
|                      | Screws, Glue, etc      | R 20.00  | R 60.00           | R 870.00        |
|                      | <b>Production Cost</b> |          |                   | <b>R 290.00</b> |
| <b>Profit Margin</b> |                        |          |                   |                 |
|                      | at 20%                 | R 58.00  | R 174.00          | R 1,044.00      |
| <b>Divide by 3</b>   |                        |          | <b>Per Coffin</b> | <b>R 348.00</b> |
|                      | <b>Model Price</b>     |          | <b>Model P</b>    | <b>R 350.00</b> |

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This correlates with the undertaker survey where the undertakers and producers who were interviewed stated that the coffin cost between R200.00 and R300.00 Rands to produce, and in the case of the construction price, R290.00 was reached. With a marginal profit margin for the producer and end price of R350.00 was used.

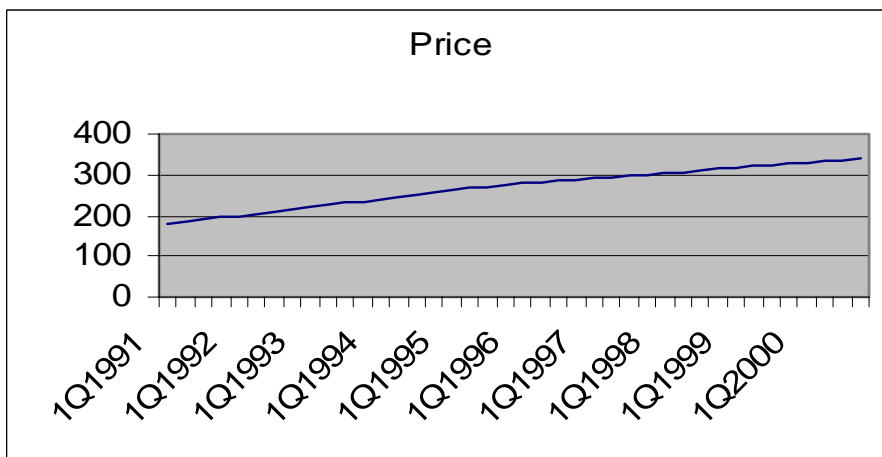


**Figure 5.3a: Cost to Produce an Average Coffin**

Source: Baur, Undertaker Survey, 2001.

By using a simple linear equation, prices line from 1989 to 1993, then from 1993 to 1996, and then again from 1996 to 2001 were determined. (Last quarter of 2001, as coffin was constructed in January 2002). See figure 5.3a and 5.3b.

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**Figure 5.3b Price change over time**

The decreasing rate of price increase on coffins from 1996 to 2000 was supported by the response of undertakers during the undertaker survey. The reason given during the



interviews was that competition was constantly increasing, making it very difficult for firms to make substantial profits on coffins.

Using manufacturing prices as opposed to retail prices have several advantages.

- Very seldom is a coffin sold to a consumer as a stand-alone product. Pricing is set by a combination of services and product, often designed to suit the consumers needs.
- Each undertaker provides their own set of unique services and “contributions” to the consumer. These are then priced accordingly and passed on to the consumer.
- The manufacturer provides a product, the undertaker provides a service. It becomes difficult to separate the coffin from the price of the service. The services offered are tailored for the client.
- The influence of unemployment, low disposable incomes, low savings to income ratios etc, are absorbed by the undertaker, due to the nature of the service. The manufacturer will seek the best price for his product. Therefore, the social influence of the consumer market on the manufacturer is reduced.
- Many producers are also retailers, and the pricing strategies used by companies may not reflect the true value of the product sold. A sole manufacturer reflects the true value of the product sold, especially in the presence of competition.

However, there are several disadvantages to using a production price:

- Production prices do not include the social factors, which determine consumer behavior.
- The amount of producers has no doubt increased from 1996, but this is difficult to estimate. The reason for this is that the degree of training required to manufacture a coffin is marginal, especially if the skill base of the manufacturer is from a related industry. For example, people who are skilled in the furniture industry may have little difficulty in adapting to the coffin industry.

### **5.2.3 Independent Variable**

The independent variable is HIV/AIDS infection rates.

#### 5.2.4 HIV/AIDS

The inclusion of the HIV/AIDS infection rate is important in this model, as it is assumed that the coffin industry may be influenced by the negative effects of HIV/AIDS. However, it is virtually impossible to determine the real mortality rates of HIV/AIDS. Mortality of infected person will be measured by the influence of other illnesses, such as Tuberculosis, Cholera, Malaria or even the common cold. Without the presence of HIV/AIDS, there is a greater likelihood that the person would otherwise have survived these other infections.

Therefore, the HIV/AIDS infection rate will give a better variable than the actual HIV/AIDS mortality and therefore reduce the rate of speculation in the model itself.

| Province          | 1998   | 1999   | 2000   |
|-------------------|--------|--------|--------|
| Eastern Cape      | 15.90% | 18.00% | 20.20% |
| Free State        | 22.80% | 27.90% | 27.90% |
| Gauteng           | 22.50% | 23.90% | 29.40% |
| KwaZulu Natal     | 32.50% | 32.50% | 36.20% |
| Mpumalanga        | 30.00% | 27.30% | 29.70% |
| North West        | 21.30% | 23.00% | 22.90% |
| Northern Cape     | 9.90%  | 10.10% | 11.20% |
| Northern Province | 11.50% | 11.40% | 13.20% |
| Western Cape      | 5.20%  | 7.10%  | 8.70%  |
| South Africa      | 22.80% | 22.40% | 24.50% |

**Table 5.4. National HIV infections by age group for 2000.**

Source: Report National HIV and Syphilis Sero-Prevalence Survey, 2000

The relationship between average rate of infection of HIV/AIDS and price is positive, that is, as the infection rate increases, so too there will be an increase in demand for coffins. This will result in an increase in the price of coffins.

### 5.2.5 Mathematical Form of the Model

$$P=f(A)$$

$$Y = Q + AX_1 + u$$

**Therefore:**

$$P = Q + AX_1 + u$$

Where:

**Q = Intercept**

**P = Price**

**A = HIV/AIDS**

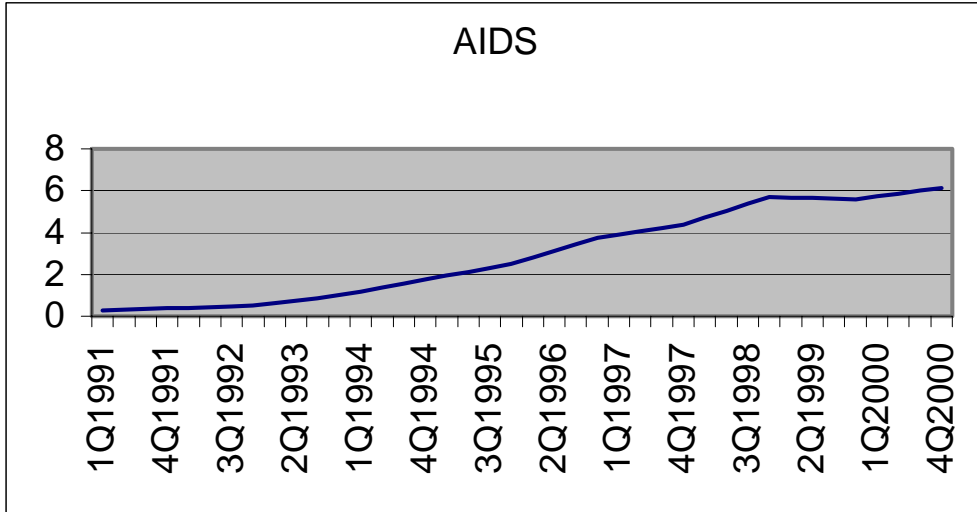
**u = error term**



### 5.2.6 Price is a function of Average rate of Infection of HIV/AIDS

This model is a linear model, and all tests will be conducted using the Ordinary Least Square method (OLS). The model is based on a single linear regression equation, and all non-linear data is converted to linear form.

The data is calculated in quarters from the first quarter of 1991, until the last quarter of 2000. There are 40 data points.



**Figure 5.5 Movement of the Average HIV/AIDS Infection Rates Over Time.**

Source: Report National HIV and Syphilis Sero-Prevalence Survey, 2000



## 5.2.7 Testing and Evaluation of the Estimates

### SUMMARY OUTPUT

| <i>Regression Statistics</i> |                 |
|------------------------------|-----------------|
| <b>Multiple R</b>            | <b>0.968857</b> |
| <b>R Square</b>              | <b>0.938684</b> |
| <b>Adjusted R Square</b>     | <b>0.93707</b>  |
| <b>Standard Error</b>        | <b>12.00004</b> |
| <b>Observations</b>          | <b>40</b>       |

### ANOVA

|            | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 1         | 83770.77  | 83770.77  | 581.7379 | 1.22E-24              |
| Residual   | 38        | 5472.034  | 144.0009  |          |                       |
| Total      | 39        | 89242.8   |           |          |                       |

|              | <b>Coefficients</b> | <i>Standard Error</i> | <b>t Stat</b>   | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|--------------|---------------------|-----------------------|-----------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept    | <b>203.6878</b>     | 3.283969              | <b>62.02489</b> | 8.48E-40       | 197.0398         | 210.3359         | 197.0398           | 210.3359           |
| X Variable 1 | <b>21.93573</b>     | 0.90947               | <b>24.11924</b> | 1.22E-24       | 20.0946          | 23.77685         | 20.0946            | 23.77685           |

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## 5.2.8 Economic a priori criteria

$$P = 203.687 + 21.9357A + u$$

## 5.2.9 Signs

The relationship between HIV/AIDS and Price is Positive. As the HIV/AIDS infection rate increases, so too does the demand for coffins. This is only true as long as HIV/AIDS affects the mortality rate. Therefore, economically at this stage, the relationship between price and HIV/AIDS is acceptable.

### 5.2.10 Statistical Criteria, First Order Tests

The “**goodness**” of fit is measured by the determination coefficient **R squared**, which shows the percentage variation of the dependant variable, Price, that can be explained by the independent variables. The positive R squared of 0.938 means that the regression line gives a very accurate fit to the observed data, since the line explains 93.8 percent of the total variation of the price value around their mean.

The **adjusted R squared** is 0.937, which is similar to the R squared and shows the goodness of fit, however it takes into account the additional variables, which will increase the R squared value.

The statistical reliability of the parameter estimates is tested using the students **T-Test**. The sample value of the  $t^*$  is calculated. This value is compared to the theoretical values of  $t$ , which define the critical region in a two tailed test with  $n-k$  degrees of freedom, where  $n$  is the sample size and  $k$  is the total number of estimated parameters. Critical  $t$  value at  $(0.025, 39)$ , is 2.021 on a two tailed test, at  $\text{Alfa} = 0.05$ .

For HIV/AIDS,  $t = 24.12$ , which shows that the estimate has statistical significance.

To calculate the statistical significance of the model, We use the **F-Test**. Critical  $F_{0.05(2,38)}$  value for the regression is 3.23, and calculated  $F$  value is 581.738. Therefore, we reject the null hypothesis that the graph tends to zero and conclude that the computed  $F$  value is highly significant. Therefore, the regression is statistically significant.

### 5.2.11 Econometric Criteria: Second Order Tests

#### 5.2.12 Test for Heteroscedasticity

The assumption of homoscedasticity is the assumption of constant variance of the error term. If heteroscedasticity exists in the model, then the estimator is inefficient, the estimator is not more preferred, and the estimator is not more BLUE, (Best Linear Unbiased Estimator). In other words, heteroscedasticity renders the formulae for the

variance of the estimator invalid and therefore renders the hypothesis testing procedure for the statistical significance of the estimator invalid.

The Goldfeld-Quandt Test, proves Homoscedastic for HIV/AIDS.

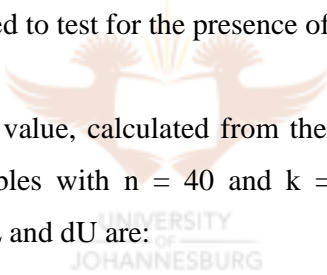
$F^* = 0.446$   
**Deg. F = 2.6**  
 $F^* < F$  Homoscedastic.

### 5.2.13 The Test for Autocorrelation

Autocorrelation refers to the relationship between two consecutive values of the error term  $u$ .

The Durbin-Watson test is used to test for the presence of Autocorrelation.

In this case the empirical  $d^*$  value, calculated from the regression residuals is 1.503. From the Durbin Watson tables with  $n = 40$  and  $k = 1$ , and a 5 percent level of significance, the values for  $dL$  and  $dU$  are:



|   |
|---|
| $DW = 0.031079$                           |
| $dL = 1.44$                               |
| $dU = 1.54$                               |
| <b>Result is Positive Autocorrelation</b> |

The test shows a tendency towards positive Autocorrelation. This is due to the extent of extrapolation present due to the nature of the data. Extrapolation is present HIV/AIDS data on which the infection rate is based.

### 5.2.14 The Test for Multicollinearity

Multicollinearity refers to the presence of a linear relationship between the explanatory variables. Due to the presence of only one variable in this model, there is no need to test the presence of Multicollinearity.

### 5.2.15 Theil's inequality coefficient (U)

Theil's Inequality Coefficient tests the forecasting ability of the model.

|                     |             |           |
|---------------------|-------------|-----------|
| Theil's Coefficient | <b>0.70</b> | <b>OK</b> |
|---------------------|-------------|-----------|

The value of U, ( $0 < U < 1$ ). The closer the coefficient of U is to 0, the better the forecasting ability of the model will be. With Theil's = 0.70, the predictability of this model is acceptable.

To test the ability of the model to forecast, a graph was drawn using the historical data to calculate the predicted price line and then it was compared to the actual historical values of the price line. See figure 5.7 below:

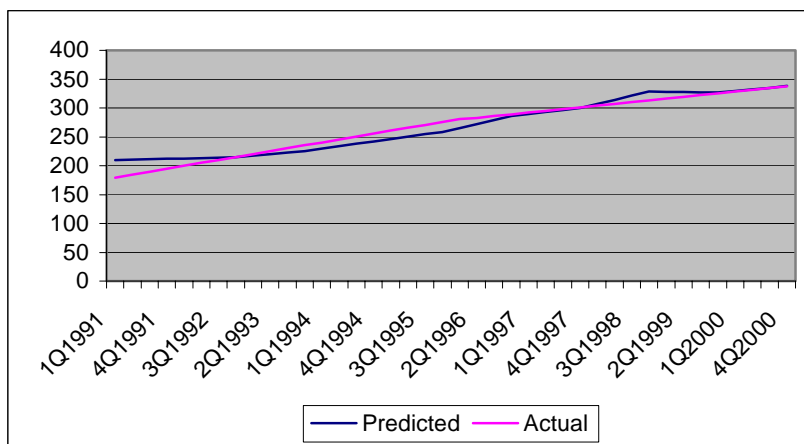


Figure 5.6 Predicted VS Actual Data



### **5.3 Adding Competition to the Model**

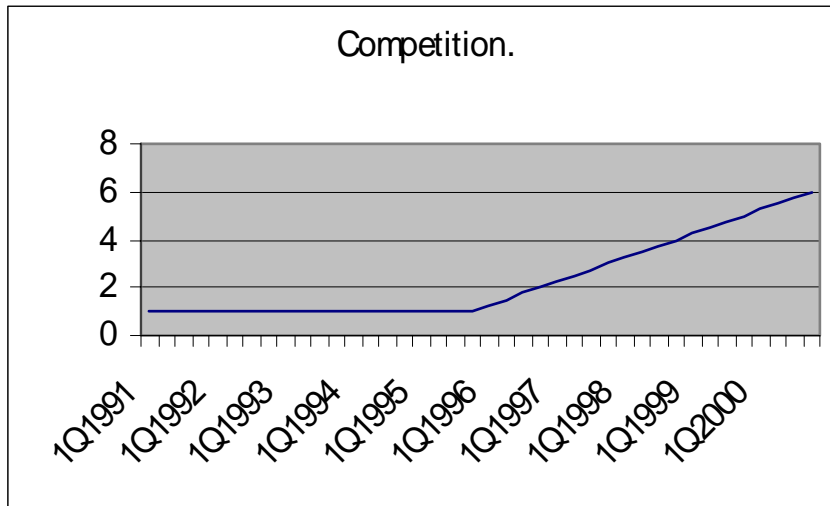
From the previous model, the influence of HIV/AIDS has a strong degree of significance in the coffin industry. However, the influence of HIV/AIDS on its own does not give any substantial indication of the growth within the industry. Again, highlighting the influence of the manufacturing sector within the coffin industry, the influence of competition to this model was added.

#### **5.3.1 Competition**

There is no exact measure for the number of companies producing coffins in South Africa. During the undertaker survey, this point became rather significant when interviewing the undertakers. In most cases, the undertakers interviewed referred to the “fly-by-night” businesses, which enter the market and influence prices. This however is characteristic of a highly competitive industry.

Due the virtual impossibility of measuring the exact number of coffin manufacturers entering and leaving the market, it was decided to create a proxy variable to mimic the number of producers who have entered the market. I chose a constant unit variable from 1991 until 1996, generated from the 1993 and 1996 CSS reports provided by Statistics South Africa. Number of manufacturers for these periods are 28 for 1993 and 30 for 1996.

Thereafter, from 1996 to 2000, I have increased the number of firms entering the market, to mimic the steadily increase in competition from 1996 onwards. The proxy increases one unit for every year after 1996, the last suitable record of coffin manufactures provided by Statistics South Africa. In order to smooth the process of manufacturers entering the industry, the weighted moving average process was used, which mimics a gradual increase in competition as opposed to sudden increases every quarter. Furthermore, the assumption that more businesses are entering the market than exiting, results in the constant increase in competition. Figure 5.7 below shows the proxy variable mimicking competition over time.



**Figure 5.7 Variable Mimicking Competition**

The disadvantage of this proxy variable is that it does not account for the increase in production of firms that are in existence from pre 1996. However, existing companies can only produce a limited amount of coffins to meet the demand, without becoming monolith empires, therefore, the possibility of an increase in production cannot be disputed, but, it must be emphasized that the greatest concern for the undertakers and manufactures interviewed was the growing number of competitive businesses that were developing within the market.

The relationship between price and competition is negative, that is, as competition increases, so the price level decreases, *ceteris paribus*.

### 5.3.2 Mathematical Form of the Model

$$P=f(A, C)$$

$$Y = Q + AX_1 + CX_2 + u$$

**Therefore:**

$$P = Q + PX_1 - CX_2 + u$$

Where:

**Q = Intercept**

**P = Price**

**A = HIV/AIDS**

**C = Competition**

**u = error term**

### 5.3.3 Price is a function of HIV/AIDS and Competition

This model is a linear model, and all tests will be conducted using the Ordinary Least Square method (OLS). The model is based on a multiple linear regression equation, all non-linear data is converted to linear form.

Reasons for the choice of this model:

- Estimates obtained have optimal properties.
- The computational method is not very complicated.
- The results of the OLS method are very satisfactory.

The data is calculated in quarters from the first quarter of 1991, until the last quarter of 2000. There are 40 data points.



### 5.3.4 Testing and Evaluation of the Estimates

SUMMARY OUTPUT

| <i>Regression Statistics</i> |                 |
|------------------------------|-----------------|
| <b>Multiple R</b>            | <b>0.977745</b> |
| <b>R Square</b>              | <b>0.955984</b> |
| <b>Adjusted R Square</b>     | <b>0.953605</b> |
| <b>Standard Error</b>        | <b>10.3036</b>  |
| <b>Observations</b>          | <b>40</b>       |

ANOVA

|            | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 2         | 85314.72  | 42657.36  | 401.8054 | 8.07E-26              |
| Residual   | 37        | 3928.077  | 106.1642  |          |                       |

Total 39 89242.8

|              | <b>Coefficients</b> | <i>Standard Error</i> | <b>t Stat</b>    | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|--------------|---------------------|-----------------------|------------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept    | <b>205.1456</b>     | 2.845512              | <b>72.09445</b>  | 2.13E-41       | 199.3801         | 210.9112         | 199.3801           | 210.9112           |
| X Variable 1 | <b>28.92061</b>     | 1.99112               | <b>14.52479</b>  | 7.3E-17        | 24.88622         | 32.955           | 24.88622           | 32.955             |
| X Variable 2 | <b>-9.532362</b>    | 2.499609              | <b>-3.813542</b> | 0.000503       | -14.59705        | -4.467679        | -14.59705          | -4.467679          |

### 5.3.5 Economic a priori criteria

$$P = 205.1456 + 28.9206A - 9.532C + u$$

### 5.3.6 Signs

The relationship between HIV/AIDS and Price is Positive. According to the law of demand, as the HIV/AIDS infection rate increases, so too does the demand for coffins. This is only true as long as HIV/AIDS affects the mortality rate. By introducing modern medication, such as AZT, the relationship will still hold, yet maybe not to the extent that it has at present. If, however a cure were found, then this variable would become redundant. Therefore, economically at this stage, the relationship between price and HIV/AIDS is acceptable.

The relationship between Competition and Price is negative. In a near perfectly competitive economy, the relationship between price and competition is negative. If competition was to increase, prices are likely to decrease, and visa versa, according to the law of supply. Therefore, economically, relationship between price and competition is acceptable.

### 5.3.7 Statistical Criteria, First Order Tests

The “**goodness**” of fit is measured by the determination coefficient **R squared**, which shows the percentage variation of the dependant variable, Price, that can be explained by the independent variables. The positive R squared of 0.955 means that the regression line gives a very accurate fit to the observed data, since the line explains 95.5 percent of the total variation of the price value around their mean.

The **adjusted R squared** is 0.9536. The adjusted R squared is similar to the R squared, which shows the goodness of fit, however it takes into account the additional variables, which will naturally increase the R squared.

The statistical reliability of the parameter estimates is tested using the students **T-Test**. The sample value of the  $t^*$  is calculated. This value is compared to the theoretical values of  $t$ , which define the critical region in a two tailed test with  $n-k$  degrees of freedom, where  $n$  is the sample size and  $k$  is the total number of estimated parameters. Critical  $t$  value at  $(0.025, 38)$ , is 2.021 on a two tailed test, at  $\text{Alfa} = 0.05$ .

For HIV/AIDS,  $t = 14.525$ , and for Competition,  $t = -3.814$ . The values of all the estimated parameters fall outside the specified critical area, which shows that the estimates are all statistically significant.

To calculate the statistical significance of the model, the **F-Test** was used. Critical  $F_{0.05(2,37)}$  value for the regression is 3.23, and calculated  $F$  value is 401.8054. Therefore, we reject the null hypothesis that the graph tends to zero and conclude that the computed  $F$  value is highly significant. Therefore, the regression is statistically significant.

### 5.3.8 Econometric Criteria: Second Order Tests

#### 5.3.9 Test for Heteroscedasticity

The assumption of homoscedasticity is the assumption of constant variance of the error term. If heteroscedasticity exists in the model, then the estimator is inefficient, the

estimator is not more preferred, and the estimator is not more BLUE, (Best Linear Unbiased Estimator). In other words, heteroscedasticity renders the formulae for the variance of the estimator invalid and therefore renders the hypothesis testing procedure for the statistical significance of the estimator invalid.

The Goldfeld-Quandt Test proves Homoscedastic for both HIV/AIDS and competition.

|          |                |               |
|----------|----------------|---------------|
| HIV/AIDS | <b>F*=</b>     | 0.4462        |
|          | <b>Deg. F=</b> | 2.69          |
|          | <b>F*&lt;F</b> | Homoscedastic |

|         |                |               |
|---------|----------------|---------------|
| Compet. | <b>F*=</b>     | 0.0085        |
|         | <b>Deg. F=</b> | 2.69          |
|         | <b>F*&lt;F</b> | Homoscedastic |

### 5.3.10 Test for Multicollinearity

Multicollinearity refers to the presence of a linear relationship between the explanatory variables. This is not a condition that either exists or does or does not exist, but is a phenomenon inherent in most relationships due to the nature of the economic magnitudes.

Reasons for the presence of Multicollinearity include:

- The tendency of economic variables to move together over time.
- The use of lagged variables.

The method adopted in this model to test for the presence of Multicollinearity is Frisch's Congruency Analysis. The correlation matrix below showed the presence of collinearity between the explanatory variables. By first testing the influence of HIV/AIDS and then adding Competition, Frisch Congruency Analysis showed an improvement in the R test and the Durbin Watson test. The two-tailed t tests were found acceptable, falling outside the critical region, with a significance level of 5%. Therefore, the presence of Multicollinearity is not a serious problem. Multicollinearity has no negative impact in this model.

|          | Column 1 | Column A | Column C |
|----------|----------|----------|----------|
| Column 1 | 1        |          |          |
| Column A | 0.968857 | 1        |          |
| Column C | 0.83965  | 0.919884 | 1        |

## Frisch's Congruence Analysis

| Function | SIGN      | T.TEST       | R <sup>2</sup> | DW     | Test      |
|----------|-----------|--------------|----------------|--------|-----------|
| Y=F(A)   | POS.      | 24.1192      | 0.0.939        | 0.06   | OK        |
| Y=F(A,C) | POS./NEG. | 14.525,-3.81 | 0.955          | 0.105  | OK        |
|          | OK/OK     | OK/OK        | Better         | Better | <b>OK</b> |
|          |           |              |                |        |           |

### Result:

**Economic a priori is OK, T-Test OK, Overall R<sup>2</sup> has improved. This model is Useful! Multicollinearity has no negative impact.**



### 5.3.11 The Test for Autocorrelation

Autocorrelation refers to the relationship between two consecutive values of the error term  $u$ . Causes of Autocorrelation include:

- Omitted variables.
- Miss-specification of the mathematical form of the model.
- The presence of extrapolation or smoothing in the data.
- Correlation between variables over time
- Miss-specification of the error term over time.

The Durbin-Watson test is used to test for the presence of Autocorrelation. The Durbin Watson statistic is defined as the ratio of the sum of squares of the first differences of the residuals to the sum of squares of the residuals themselves. Autocorrelation is a special case of correlation that refers to the relationship between the successive values of the error term. (van Zyl, 1997, pp. 94-98)

In this case the empirical  $d^*$  value, calculated from the regression residuals is 1.503. From the Durbin Watson tables with  $n = 40$  and  $k = 2$ , with a 5 percent level of significance, the values for  $d_L$  and  $d_U$  are:

|  |
|--|
| <b>DW= 0.105</b>                       |
| <b>dL 1.39</b>                         |
| <b>dU 1.6</b>                          |
| <b>Positive Autocorrelation exists</b> |

The test shows a tendency towards positive Autocorrelation. This is due to the extent of extrapolation present due to the nature of the data. Extrapolation is present in the proxy used to mimic competition, as well as the HIV/AIDS data on which the infection rate is based.

This does not imply that the model is not suitable for forecasting, however it is not more considered BLUE, a (Best Linear Unbiased Estimator). As a rule, for no serial correlation to be present the Durbin-Watson value must be as close to 2 as possible. If serial correlation exists, the standard errors are biased, which means that the t-values might seem to be statistically significant, although, they are not.

In general however, it is acceptable to live with the existence of serial correlation, given that the forecasting ability can be tested by making a forecast over historical periods and then comparing the forecasted values with the actual values. If the error terms are not too serious, the function can be accepted as such. (Greyling et.al., 1997, pp. 249-251)



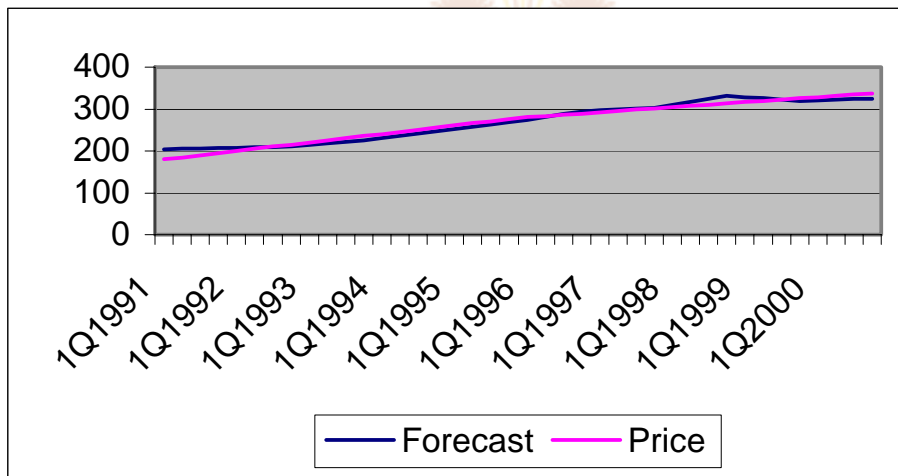
### 5.3.12 Theils Inequality Coefficient (U)

Theil's Inequality Coefficient tests the forecasting ability of the model.

|                              |
|------------------------------|
| Theils Coef. <b>0.778</b> OK |
|------------------------------|

The value of U, ( $0 < U < 1$ ). The closer the coefficient of U is to 0, the better the forecasting ability of the model will be. With Theils = 0.778, the predictability of this model is acceptable.

To test the ability of the model to forecast, I have drawn a graph using the historical data to calculate the predicted price line and then compared it to the actual historical values of the price line. See figure 5.8 below:



**Figure 5.8 Predicted VS Actual Data of Price to Competition and Average Rate of Infection of HIV/AIDS Over Time**

## 5.4 Comparison between Models

The relevance of the models is highlighted by comparing the results of the two:

| Comparison | A+C         | A+C   | A                |
|------------|-------------|-------|------------------|
| Variable   | X1          | X2    | X                |
| Signs      | Pos.        | Neg.  | Pos.             |
| R squared  | 0.955       |       | 0.938            |
| T-Test     | 14.52       | -3.81 | 24.119           |
| F-Test     | 401.805     | N/A   | 581.737          |
| Hetero.    | Homo.       | Homo. | Homo.            |
| Multi.     | None        | None  | N/A              |
| Auto       | Positive    |       | Positive         |
| Theils     | 0.78        |       | 0.7              |
| AIC        | 2458.264    |       | 3424.501         |
| SIC        | 170.777     |       | 237.908          |
| A Priori   | Yes         | Yes   | Yes              |
| F. Model   | <b>Best</b> |       | <b>Sec. Best</b> |

The comparison in the above table shows that although both models are suitable for forecasting purposes, the inclusion of competition is a very important factor in determining the pricing strategy of manufacturers, and is therefore a better forecasting model. Therefore, the proxy used to mimic the competition factor is suitable. This in turn highlights the existence of a market environment that shows signs of near perfect competition.

## 5.5 Conclusion

The aim of this chapter was to develop a model to explain market mechanism and forecast price determination within the South African coffin industry. From this chapter, several points became relevant. Firstly, the manufacturing price of coffins is HIV/AIDS driven. Secondly, the price of coffins is also influenced by competition, that is, the number of manufactures that have entered the market.

Unfortunately, this model does not show the influence of social factors such as the ability to pay, income to savings ratio, household debt and unemployment etc. However, what is apparent, is the influence that the HIV/AIDS pandemic has had on South Africa, and the manner in which the market has grown to meet that demand.



## **Chapter 6**

# **A Review of the Qualitative Survey Designed to Collect Socioeconomic Information from the South African Consumer, Producer and Undertaker**



## **6.1 Introduction**

The aim of this chapter is to illustrate the design and implementation of surveys directed at consumers, undertakers, producers and which were constructed in order to gather important data on the South Africa coffin industry.

The study of the South African Coffin Industry is unique on two fronts. Firstly, as an industry, it is reasonably understudied, and therefore, as both an economic concern and as a social structure, it requires some immediate attention, especially as it is so greatly influenced by the negative effects of HIV/AIDS. Secondly, from an economic perspective, the industry has an influence on the economy, either through job creation and the influence it has on the unemployment sector, the disposition of incomes of certain social and cultural groups and also the influence it exerts on certain policy and decision makers within the economy.

When gathering data, certain features of available data begin to show gross shortfalls, this includes consumer tastes and preferences, consumer expectations, the cultural values and spending patterns of the consumer. Similarly, the influence of secondary industries on the coffin industry, the influence of substitute products and imports and the role of centralized organizational bodies which direct policy making decision behavior.

## **6.2 Research Proposal**

The South African coffin industry is unique, in that on one hand it consists of old established enterprises, which have served their respective communities for many years. On the other hand, the South African coffin industry is suddenly expanding at a rapid rate, brought about by many new businesses identifying profit motives, induced by certain effects including that of HIV/AIDS.

The purpose of this research is to identify the market mechanism present within the coffin industry. Notably, the definition of the coffin industry is vast and consists of many different inter-linked specialized industries, from coffin production and

undertaker services through to grave maintenance, funeral functions, transport and catering services.

### **6.3 The General Hypothesis**

Price setting behavior is not limited to either the consumer, retailer or producer alone, but is influenced by a combination of factors from all three spheres of the decision making platform. Therefore, to determine the price setting strategies, the survey is designed to capture additional elements of consumer social behavior and decision making either cultural, religious, employment status and income, etc. Furthermore, elements of retailer (undertaker) attitudes, motivation and methodology, etc. also affect price-setting strategies.

The hypothesis of this survey is to prove that the market mechanism that influences decision-making behavior and therefore price setting within the South African coffin industry is near perfect competition.

Most markets seldom come close to exhibiting perfect competition, and therefore it would be substantial to prove near perfect competition within the South African coffin industry. However, the focus of this report does not rest on the market mechanism alone, but also includes additional characteristics including consumer motivation and retailer behavior. A combination of these issues will then lead to determining price setting behavior in the South Africa coffin industry.

### **6.4 Methodology Used in this Research**

The methodology of this research is based on two question type surveys, the first is aimed at the consumer, and the second is aimed at the producer and retailer. The reason for this is to try to extract from the market, both the demand and the supply factors, that may influence pricing behavior. It is somewhat true, I must add, as an esteemed colleague recently humorously commented, “demand is simply generated when people die”. However, demand is influenced by a wide verity of factors, which the surveys proposed have shown.

Before designing the surveys, a great deal of informal interviews and market analysis was done in order to specifically target the correct questions to the respondents. These interviews included many of the subsidiary players in the field, including church ministers, coffin producers and undertakers, hearse and trailer manufacturers, mortician specialists, government officials, policy advisors from Statistics South Africa, South Africa Reserve Bank, Cemetery managers, etc.

## **6.5 The Consumer Survey**

The aim of the survey was to reach a respondent base and generate a uniform distribution of usable answered surveys from across the country. The consumer category was divided into sample areas within different provinces of South Africa. The sample areas include, Gauteng: Johannesburg and Soweto, Northern Province: Pietersburg. Eastern Cape: East London. Natal: Pietermaritzburg, North West Province: Mafikeng and the Western Cape: Cape Town.

The Idea for such a distribution was to get an even spread across the vast range of a diverse culturally distributed population. In order to maintain a degree of homogeneity in the sample, only city locations where selected were one could capture both the migrant labor and the urban dweller. Every allocated region in the survey was allocated approximately 40 sample surveys to complete, with the hope that at least 20 useable surveys are returned per area. Several field agents were chosen and trained to distribute and collect the question sheets to the significant respondents. They were chosen because of proficiency of language and ability to communicate the questions to the respondents. A test sample was issued and consumers responded positively towards the questions in the survey.

The decided target consumer was one that had assisted with the decision making and financing of a funeral within the last three years. Accompanying the instructions for the survey was a letter provided for the respondent to describe the purpose of the research, and indicate that the surveys where strictly confidential.

280 surveys where issued, of which 180 where returned, and only 121 where unspoiled, and therefore used in the analysis.

## 6.6 The Undertaker Survey

The question surveys for the producer and retailer was designed to be conducted via a telephonic interview, rather than via e-mail, letter or fax, to reduce the high possibility of low feedback.

South African undertakers are somewhat divided into three large funeral associations, whom I approached individually when doing the survey. These include the National Funeral Directors of South Africa (NFDSA), the Independent Funeral Directors Association of South Africa, (IFDASA), and the African Funeral Directors association (SOFUA).

The telephonic surveys were conducted by myself using lists provided by each of the undertaker associations mentioned above. From the list provided, a random selection of undertakers were contacted from across the country. Emphasis was placed on undertakers from the same regions of the consumer survey, however, in order to generate a more even spread of data, (as many of the consumer respondents were migratory), contacts from the entire country were selected. However, certain contacts from the lists had to be removed in order to prevent the influence of very large franchise businesses that exhibited very similar characteristics, thus preventing skewness by providing very similar answers. These companies included branches of AVBOB, Doves, Martins, Saffas, etc., of which only a few branches were selected to include them in the survey, but the emphasis of the survey was based more on the independent funeral operators. Each of the undertakers interviewed were issued with a letter from the university, confirming confidentiality and privacy regarding all information acquired, and that the information provided was to be used for no other purpose other than that of academia.

A total of 140 undertakers were contacted and only 60 provided me with usable surveys.

The associations mentioned above, provided me with contact telephone numbers of their respective members, from which the telephonic surveys could be conducted. The



data that was gathered in this survey was used to develop an information base from which I could discuss the respective elements within the industry. Note: the amount of information that is available on the industry appears to be very limited, however, the industry tends to be much larger than one would first imagine it to be. Respondents attitudes to the survey were somewhat mixed. Some were kind enough to explain in some detail the workings of the industry, while others were not prepared to divulge any information whatsoever.

### **6.7 Limitations to the Survey**

South Africa is divided into many different and diverse cultures and religions, most of which adhere to different attitudes towards burial practices and customs. In order to reach all of these segments would prove logistically and financially a Herculean task. Therefore, in order to capture a significant data spread, only certain business centers were chosen which would attract a suitable spread of both urban and rural (migratory) labor.

Certain religious communities, for example, predominantly Jewish, and in some cases Hindu and Muslim, have specific societies through which standardized and religiously specific funeral arrangements are made and conducted. These respective societies also dictate (as in the case of a Jewish funeral), the type of coffin manufactured and burial rituals. Therefore, these religions communities, were excluded from the analysis.

The period for the data analysis was another concern. Firstly the consumer survey was conducted from June through to August, and secondly, the undertaker survey was conducted from August through until end of November. During the undertaker survey, from August until the end of November, the Rand was experiencing a large degree of devaluation, striking historical lows. From the interviews that I conducted with the undertakers, this became relevant in the pricing attitude expressed by some, and may have influenced the data. The data collected was only done in a single cycle, not allowing for seasonal variation or any time series influence.

Similarly, the data was greatly generated from the traditional local respondents, and therefore is predominantly biased towards culturally indigenous South African's. This

simplified the data analysis a great deal in that it limited the influence of cremation as an alternative to burial, allowing the focus to be based on traditional burial practice industries, which influences the majority of the South African population.

Another issue concerning the surveys, (predominantly the consumer survey), was the interpretation of the questions. With a high degree of illiteracy, or low educational backgrounds, of some of the consumers interviewed, added greatly to this problem. With certain questions, this became very apparent, and the interpretation of the data generated was left to some degree of subjective logic. However, the interviewer was well skilled in language and had a high degree of competency in expressing the point of the questions to the respondents. However, there was still room for error.

The choice of a standardized homogeneous coffin from which to set a base price as a comparison mechanism for coffins was rather subjective to the interpretation of the undertaker or producer being interviewed. Therefore, price data given could have been either inflated or deflated, determined by the interpretation of the question being asked, despite a consensus being reached with the undertaker during the interview.

Finally, many of the undertakers interviewed were not particularly eager to divulge confidential data in the face of high competition or possible spying within the market. Even with a re-assurance fax from the Department of Economics at RAU, extracting data, which was not over or under inflated, was a mammoth task in itself. However, many of the undertakers provided accurate data, and were not intimidated by the interview in any way. These people provide me with the most valuable data of them all.

## **6.8 Format of the Surveys**

Both surveys were designed for simplicity of response in order to capture the greatest level of accuracy in the shortest possible time. Most question answers were divided into interval ranges, as opposed to point estimators. This greatly simplified the interview process and reduced some of the subjective interpretation to a bare minimum.

The surveys were divided into segments, namely demographic and geographic response sections, expectations, market influence, payments, tastes, level of

employment, financial positions, etc. Each of these segments was laid out in order to create a degree of continuity from question to question.

The surveys were also designed to facilitate the responses into data points in order to be easily transferred into a database, and then be interpreted with the assistance of SPSS ver 10 for windows, a demonstration copy supplied by Statkon, of Rand Afrikaans University.



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**Department of Economics**  
**Masters Research**



*This survey is intended strictly for research purposes.*

*All Information is kept strictly confidential.*

Instructions: 1. Unless specified, please simply mark the relevant boxes to the relevant questions with an " X " .

2. Please answer all questions as accurately as possible.

3. No name or address or identity is required for this survey.

1.What is your age ?

|            |       |       |       |       |       |         |
|------------|-------|-------|-------|-------|-------|---------|
| 15 or less | 16-25 | 26-35 | 36-45 | 46-55 | 56-65 | over 65 |
|------------|-------|-------|-------|-------|-------|---------|

2. What is your monthly income ?

|            |             |             |             |             |             |           |
|------------|-------------|-------------|-------------|-------------|-------------|-----------|
| Unemployed | 1-1500      | 1501-3000   | 3001-4500   | 4501-6000   | 6001-7500   | 7501-9000 |
| 9001-10500 | 10501-12000 | 12001-13500 | 13501-15000 | 15001-16500 | 16501-18000 | >18000    |

3. What is your marital status ?

|        |         |
|--------|---------|
| Single | Married |
|--------|---------|

4.What is your gender ?

|      |        |
|------|--------|
| Male | Female |
| Yes  | No     |

5. Do you believe that HIV/AIDS exists?

6. How many Children do you have ?

|      |   |   |   |   |   |    |
|------|---|---|---|---|---|----|
| None | 1 | 2 | 3 | 4 | 5 | >5 |
|------|---|---|---|---|---|----|

7. If you are a salary or wage earner, how many other people do you support with your wage or salary?

|      |   |   |   |   |   |    |
|------|---|---|---|---|---|----|
| None | 1 | 2 | 3 | 4 | 5 | >5 |
|------|---|---|---|---|---|----|

8. What is your home language ?

If Other, Please Specify:

|          |           |          |         |          |       |       |
|----------|-----------|----------|---------|----------|-------|-------|
| English  | Afrikaans | Zulu     | Xhosa   | S. Sotho | Swazi | Venda |
| N. Sotho | Tswana    | Shangani | Ndebele | Other:   |       |       |

9. What is the highest education that you have obtained ?

If Other, Please Specify:

|           |            |        |         |              |            |            |
|-----------|------------|--------|---------|--------------|------------|------------|
| Grade 0-6 | Grade 6-11 | Matric | Student | Degree/Dipl. | Post Grad. | Apprentice |
| Other:    |            |        |         |              |            |            |

10.In which province do you reside ?

|         |         |         |     |         |        |          |
|---------|---------|---------|-----|---------|--------|----------|
| Gauteng | OFS     | N. Cape | KZN | E. Cape | W.Cape | N. Prov. |
| Mpumal. | N. West |         |     |         |        |          |

11.Which category best describes your occupation?

If Other, Please Specify:

|         |           |          |         |            |           |         |
|---------|-----------|----------|---------|------------|-----------|---------|
| Unempl. | Constr.   | IT       | Health  | Education  | Gov.Serv. | Mining  |
| Retail  | Transport | Business | Culture | Entertain. | Security  | Finance |
| Other:  |           |          |         |            |           |         |

12. Do you have a funeral insurance or funeral policy?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

13. If Yes to the previous question, how much do you contribute to it every month?

|            |       |       |        |         |         |      |
|------------|-------|-------|--------|---------|---------|------|
| 20 or less | 21-40 | 41-60 | 61-100 | 101-200 | 201-400 | >400 |
|------------|-------|-------|--------|---------|---------|------|

14. How many dependants are covered by your funeral policy?

|      |   |   |   |   |   |    |
|------|---|---|---|---|---|----|
| None | 1 | 2 | 3 | 4 | 5 | >5 |
|------|---|---|---|---|---|----|

15. Have you recently been involved in the purchase of a coffin?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

16. How long ago, approximately, did this take place?

17. Were the costs of the funeral covered by the funeral insurance or funeral policy?

|     |    |           |
|-----|----|-----------|
| Yes | No | Partially |
|-----|----|-----------|

18. What type of coffin did you choose?

|            |            |        |       |         |                           |
|------------|------------|--------|-------|---------|---------------------------|
| Fibreboard | Pressboard | Wooden | Steel | Blanket | If Other, Please Specify: |
| Other:     |            |        |       |         |                           |

19. Was the coffin imported?

|     |    |            |
|-----|----|------------|
| Yes | No | Don't Know |
|-----|----|------------|

20. Was the coffin for cremation purposes?

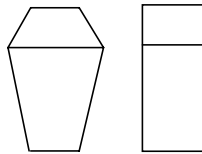
|     |    |
|-----|----|
| Yes | No |
|-----|----|

21. Was the coffin culturally significant?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

22. What shape was the coffin?

If Other, Please Specify:



|        |        |
|--------|--------|
| Coffin | Casket |
|--------|--------|

Please use this space to basically sketch the shape of the coffin, if it differs from those listed on the left.

|        |
|--------|
| Other: |
|--------|

23. What color was the coffin?

If Other, Please Specify:

|             |              |       |       |          |  |
|-------------|--------------|-------|-------|----------|--|
| Wood finish | Steel finish | Black | White | Laminate |  |
| Other:      |              |       |       |          |  |

24. How much did you pay for the coffin?

If Other, Please Specify:

|             |           |           |           |           |           |           |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 500 or less | 501-1000  | 1001-1500 | 1501-2000 | 2001-2500 | 2501-3000 | 3001-3500 |
| 3501-4000   | 4501-5000 | 5501-6000 | 6501-7000 | 7001-7500 | 7501-8000 | 8001-8500 |
| Other:      |           |           |           |           |           |           |

25. If you were insured under a funeral insurance or funeral policy, where you allocated an undertaker, or did you have a choice of undertakers?

|           |            |
|-----------|------------|
| Allocated | Own Choice |
|-----------|------------|

26. Where you satisfied with the service offered by the funeral insurance or funeral policy?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

27. Where you satisfied with the service offered by the undertaker?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

28. If employed, was the funeral insurance or funeral policy paid for by the employer?

|     |    |            |         |
|-----|----|------------|---------|
| Yes | No | Self empl. | Unempl. |
|-----|----|------------|---------|

29. In case of no funeral insurance or funeral policy, how did you obtain the money required to pay for the funeral?

If Other, Please Specify:

|         |         |        |           |         |        |      |
|---------|---------|--------|-----------|---------|--------|------|
| Savings | Friends | Family | Bank Loan | Society | Church | Work |
| Other:  |         |        |           |         |        |      |

30. What did the entire funeral cost, including the coffin, Approximately?

If Other, Please Specify:

|             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1-1500      | 1501-3000   | 3001-4500   | 4501-6000   | 6001-7500   | 7501-9000   | 9001-10500  |
| 10501-12000 | 12001-13500 | 13501-15000 | 15001-16500 | 16501-18000 | 18001-19500 | 19501-21000 |
| Other:      |             |             |             |             |             |             |

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- Instructions: 1. Unless specified, please simply mark the relevant boxes to the relevant questions with an " X ".  
 2. Please answer all questions as accurately as possible.  
 3. No name, address or identity is required for this survey.

1. Do you produce your own coffins, provide undertaker services, or both.

|         |            |      |
|---------|------------|------|
| Produce | Undertaker | Both |
|---------|------------|------|

2. Do you import coffins?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

3. If Yes to the previous question, from where do you import these coffins?

|            |            |      |        |           |        |
|------------|------------|------|--------|-----------|--------|
| N. America | S. America | Asia | Africa | Australia | Europe |
|------------|------------|------|--------|-----------|--------|

4. How many people do you employ?

|    |        |        |         |          |          |     |
|----|--------|--------|---------|----------|----------|-----|
| <3 | 3 to 6 | 6 to 9 | 9 to 12 | 12 to 15 | 15 to 18 | >18 |
|----|--------|--------|---------|----------|----------|-----|

5. In which province / provinces is / are the business / businesses situated?

|          |         |         |                             |         |        |          |
|----------|---------|---------|-----------------------------|---------|--------|----------|
| Gauteng  | OFS     | N. Cape | KZN                         | E. Cape | W.Cape | N. Prov. |
| Mpumal.  | N. West | Foreign | If foreign, Please Specify: |         |        |          |
| Foreign: |         |         |                             |         |        |          |

6. Which province is your biggest market?

|                 |         |         |                            |         |        |          |
|-----------------|---------|---------|----------------------------|---------|--------|----------|
| Gauteng         | OFS     | N. Cape | KZN                        | E. Cape | W.Cape | N. Prov. |
| Mpumal.         | N. West | Export  | If Export, Please Specify: |         |        |          |
| Export Country: |         |         |                            |         |        |          |

7. Which coffins / caskets do you produce / retail?

|     |            |            |            |        |       |  |
|-----|------------|------------|------------|--------|-------|--|
| 7a. | Produce    | Retail     | Both       |        |       |  |
| 7b. | Coffin     | Casket     | Both       |        |       |  |
| 7c. | Fibreboard | Pressboard | Superboard | Wooden | Steel |  |

8. Is the coffin sold as a stand alone product, or is the coffin bundled into a package of services ?

|             |         |        |
|-------------|---------|--------|
| Stand Alone | Bundled | Either |
|-------------|---------|--------|

9. Do you feel that the influence of HIV/AIDS effects your business?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

10. If yes to the previous question, to what degree is the effect noticeable on sales?

|         |             |        |      |          |        |             |
|---------|-------------|--------|------|----------|--------|-------------|
| Nothing | Very Slight | Slight | Mild | Moderate | Strong | Very Strong |
|---------|-------------|--------|------|----------|--------|-------------|

11. Do you feel that related imports have a competitive advantage?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

12. If yes to the previous question, to what degree is the effect noticeable on market share?

|         |             |        |      |          |        |             |
|---------|-------------|--------|------|----------|--------|-------------|
| Nothing | Very Slight | Slight | Mild | Moderate | Strong | Very Strong |
|---------|-------------|--------|------|----------|--------|-------------|

13. If you are a producer, what on average does it cost to produce an average pressboard coffin?

|       |         |         |         |         |         |         |
|-------|---------|---------|---------|---------|---------|---------|
| 0-100 | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 |
|-------|---------|---------|---------|---------|---------|---------|

If Other, Please Specify:

14. What does the average pressboard coffin mentioned in the previous question retail at ?

|         |         |         |          |           |           |           |
|---------|---------|---------|----------|-----------|-----------|-----------|
| 600-700 | 700-800 | 800-900 | 900-1000 | 1000-1100 | 1100-1200 | 1200-1300 |
|---------|---------|---------|----------|-----------|-----------|-----------|

If Other, Please Specify:

15. Approximately, how many pressboard coffins do you supply monthly?

|      |        |         |          |          |          |       |
|------|--------|---------|----------|----------|----------|-------|
| None | 1 to 5 | 6 to 10 | 11 to 15 | 16 to 20 | 21 to 25 | 25-30 |
|------|--------|---------|----------|----------|----------|-------|

If more than 30, Please Specify:

16. If you are a producer, what on average does it cost to produce an average pauper coffin?

|       |         |         |         |         |         |         |
|-------|---------|---------|---------|---------|---------|---------|
| 0-100 | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 |
|-------|---------|---------|---------|---------|---------|---------|

If Other, Please Specify:

17. What does the average pauper coffin mentioned in the previous question retail at ?

|         |         |         |         |         |         |          |
|---------|---------|---------|---------|---------|---------|----------|
| 300-400 | 400-500 | 500-600 | 600-700 | 700-800 | 800-900 | 900-1000 |
|---------|---------|---------|---------|---------|---------|----------|

If Other, Please Specify:

18. Approximately, how many pauper coffins do you supply monthly?

|      |        |         |          |          |          |       |
|------|--------|---------|----------|----------|----------|-------|
| None | 1 to 5 | 6 to 10 | 11 to 15 | 16 to 20 | 21 to 25 | 25-30 |
|------|--------|---------|----------|----------|----------|-------|

If more than 30, Please Specify:

19. Approximately, as a total, how many coffins and caskets do you supply or retail monthly?

|      |        |         |          |          |          |          |
|------|--------|---------|----------|----------|----------|----------|
| None | 1 to 5 | 6 to 10 | 11 to 15 | 16 to 20 | 21 to 25 | 26 to 30 |
|------|--------|---------|----------|----------|----------|----------|

If more than 30, Please Specify:

20. Do you decide on the price of the coffin, or do you set your prices according to other companies?

|           |         |
|-----------|---------|
| Own Price | Other's |
|-----------|---------|

21. In Case of a funeral policy or funeral insurance, does the consumer have a choice in the type of coffin purchased, or does the policy dictate the type of coffin to be provided?

|          |        |                           |
|----------|--------|---------------------------|
| Consumer | Policy | If Other, Please Specify: |
| Other:   |        |                           |

22. How do you rate your prices compared to that of other companies?

|         |         |           |
|---------|---------|-----------|
| Cheaper | Similar | Expensive |
|---------|---------|-----------|

23. Which racial group act as your largest clients?

Please rank 1 to 5 in order of importance, where 1 = Largest client group and 5 = smallest

|       |       |         |        |       |
|-------|-------|---------|--------|-------|
| White | Black | Colored | Indian | Other |
|       |       |         |        |       |

24. Are you approached by more male or by more female clients?

|     |        |       |
|-----|--------|-------|
| Men | Either | Woman |
|-----|--------|-------|

25. Is there a growing interest in cremation, as opposed to a culturally significant burial?

|         |             |        |      |          |        |             |
|---------|-------------|--------|------|----------|--------|-------------|
| Nothing | Very Slight | Slight | Mild | Moderate | Strong | Very Strong |
|---------|-------------|--------|------|----------|--------|-------------|

26. Please list the services provided by your company to the consumer, if other, please specify.

|          |              |             |             |            |            |              |
|----------|--------------|-------------|-------------|------------|------------|--------------|
| Coffin   | Hearse       | Family Car  | Flowers     | Legal Docs | B. Storage | Grave Site   |
| Catering | Tent         | Bus         | Grave Stone | Cremation  | Church S.  | Memorial S.  |
| Earn     | Mortician S. | Credit Ext. | Policy      | Insurance  | Obituary   | Table/Chairs |
| Other:   |              |             |             |            |            |              |
| Other:   |              |             |             |            |            |              |

27. Are these services listed in the previous question very similar to that offered by most other undertakers?

|           |         |
|-----------|---------|
| Different | Similar |
|-----------|---------|

28. Please list the services provided by your company to the consumer that you outsource to other companies. That is, please list those services that you offer, but is provided by other independent companies, who may be contracted to your company.

|          |              |             |             |            |            |              |
|----------|--------------|-------------|-------------|------------|------------|--------------|
| Coffin   | Hearse       | Family Car  | Flowers     | Legal Docs | B. Storage | Grave Site   |
| Catering | Tent         | Bus         | Grave Stone | Cremation  | Church S.  | Memorial S.  |
| Earn     | Mortician S. | Credit Ext. | Policy      | Insurance  | Obituary   | Table/Chairs |
| Other:   |              |             |             |            |            |              |
| Other:   |              |             |             |            |            |              |

29. Do you have difficulty in finding sufficient burial space?

|       |             |        |              |          |       |            |
|-------|-------------|--------|--------------|----------|-------|------------|
| Never | Very seldom | Seldom | Occasionally | Moderate | Often | Very Often |
|-------|-------------|--------|--------------|----------|-------|------------|



**30. Are you a member or an associate of any specific "industry related" organization?**

**Please Specify:**

**31. Please specify the nature or function of the organization / organizations that have been mentioned in the previous question.**

**If Other, Please Specify:**

|                      |                   |                   |                  |                      |                  |                   |
|----------------------|-------------------|-------------------|------------------|----------------------|------------------|-------------------|
| <b>Advert.. Serv</b> | <b>Info. Serv</b> | <b>Legal Serv</b> | <b>Admin. S.</b> | <b>Price Setting</b> | <b>Referrals</b> | <b>Represent.</b> |
|----------------------|-------------------|-------------------|------------------|----------------------|------------------|-------------------|

**Other:**

**Thank you for spending the necessary time to complete this question sheet. If there are any questions you may have regarding this survey, please contact Peter at 011-763-2911.**

## **6.9 Conclusion**

The aim of this chapter was to describe the methodology used in the process of collecting data. The data collection, which was based on two fronts, namely the consumer and the undertaker respectively, received an overwhelming response, despite the sensitive nature of the subject.

The data collected proved very useful in two ways. Firstly, detailed current information on the coffin industry is very scarce, and many of the essential factors in this dissertation required specific data in order to support many of the facts postulated. The data proved to be extremely valuable in this regard. Secondly, the data collected introduced new questions and opened new doors to further studies. There is much still to be learned from the many diverse consumer driven cultures and retailer responses that exist in the coffin industry. For example, consumer expectations, tastes and preferences are extremely sensitive and dedicated information is difficult to extract.

Economically spoken, much of the data generated was enough to paint a picture of the diverse relationship between the economy and the coffin industry. In some cases, interpretation of the data proved to be exciting and in some cases, literally "mind-blowing", especially when response categories were opposite to what was expected.

Overall, the challenge of extracting valuable and literally secretive information from many of the respondents was, on its own, a challenge of note. However, the data provided by the respondents proved to be extremely beneficial.



# **Chapter 7**

## **Conclusion**



## **7.1 Introduction**

The aim of this chapter is to give a concise synopsis of the research and the conclusions that have been presented during the previous chapters.

## **7.2 Background to this Study**

The aim of the study was to establish the methodology, motivation and determination of price setting behavior within the South African coffin industry.

In this study, it was proved that the South African coffin industry is driven by the negative influence of the HIV/AIDS pandemic. Similarly, the manufacturing price of coffins is controlled by the growing effect of competition within a near perfect competitive environment.

Since as early as 1995, South Africa has seen a growing number of burials, many of which were HIV/AIDS related. Within traditional religious cultures, certain practices were to be observed, including the purchase of a coffin for burial purposes, large and often elaborate banquets, not excluding the provision of transport and accommodation for guests during the period of the funeral, which could last for several days.

This process would put a large degree of financial pressure on a cultural group that already was experiencing the strains of low income or unemployment and low savings to income ratios. Furthermore, this again would lead to a misallocation or uneven distribution of funds, which were not invested in the appropriate sectors of the social economy, such as education for either themselves or their children, healthcare and the care of the elderly or other dependents etc.

This misallocation of savings or borrowings would be further compounded by the financial schemes that are provided to the households. This increasingly puts further pressure on individuals to source funds during a period of great financial uncertainty such as the global economic slowdown, which could be felt from as early as 1999. This situation is amplified by financial insecurity, which is present in the social environment. This is due to the high degree of market volatility which may lead to

unemployment, a situation which was experienced in South Africa from mid 1990's till today.

Questions pertaining to the effect that the HIV/AIDS pandemic has had on the economy were previously largely left unanswered. The overall influence of this pandemic is not restricted to the household, but also influences both businesses and the government. Examples of this influence on business include the number of working hours lost as people attend funerals. The additional costs that businesses have to calculate into their costing to fund funeral policies or insurance's for their employees. The negative effect of financing is not limited to the private sector, but similarly influence the public sector. Examples of these costs incurred by the government include the provision of additional state cemeteries and increasing strain on government mortuary services. The government is often seen as a last resort, and called upon to assist those who are not financially capable of paying for burials, (normally paupers and abandoned bodies), or those rare cases which are placed in a "state of helplessness", driven by funeral costs.

The initial intention of this research was to examine the market structure of the South African coffin industry and to examine price setting behavior within the market. This then led to an examination of the influence of HIV/AIDS on both the economy and the coffin industry. This tied up with traditional social religions and cultures, which were studied in some detail including a historical anthropological approach. The influence of finance schemes, undertaker market approaches and consumer responses were analyzed diligently. From this I was able to direct the construction of the model, so as to prove the influence of HIV/AIDS, which is driving demand, and proximate the un-measurable growth of the manufacturing sector within an ever growing coffin industry.

### **7.3 Method of Research**

The method of research in this study consisted of a literature survey, a quantitative study and informal interviews with certain essential players in the coffin industry. Furthermore, I had to design, distribute, collect and evaluate both a consumer survey, which was directed at the consumer market, as well as an undertaker survey, which was aimed at the retailer and producer of the South African coffin industry.

The literature survey consisted mainly of an overview of the market structure present in both perfect competitive and imperfect competitive markets. Market mechanisms and the analysis pricing structures, strategies and price rigidities. Additional literature survey was focused on the study of HIV/AIDS, traditional South African anthropology and where possible, a review of scarce information on the coffin industry.

The quantitative study consisted of the collection, processing, analyzing, interpretation and modeling of economic data. Data from Statistics South Africa and the Department of Health were used for the statistical analysis.

The consumer survey was designed to capture the demand driven influence of the South African consumer. The survey was distributed to main South Africa economic centers, to capture both the urban dweller as well as the rural based migrant worker. The survey was distributed by a number of people whom I had specifically trained for this exercise. The questions in this survey were specifically focused to capture consumer choice making behavior.

The undertaker survey, which was aimed at the South African coffin manufacturer and retailer and was designed to capture the supply side factors of choice and behavior. The survey was conducted telephonically by myself and the respondents were selected randomly from the entire country.

The informal interviews were not used in any quantitative capacity, however the respondents interviewed were able to provide me with useful information from which to direct the pattern of research in this study.

A coffin was constructed in order to estimate a final price of the coffin, which was used in the quantitative model. This was done in order to confirm the validity of the responses from the coffin manufacturers as well as to evaluate and understand what is involved in the construction process, which may influence price setting behavior.

## 7.4 Main Conclusions

In order to achieve the goals of this study, the thesis was divided into seven chapters.

Chapter one gave a short introduction with specific reference to the purpose relevance and structure of the study and introduction to the influence of HIV/AIDS on the South African economy.

The aim of chapter two was to capture the theory behind price setting behavior on a microeconomic perspective. What was important to this chapter was the definition of the basic market structure, which discussed both perfect and imperfect competition. Pricing structures and strategies were analyzed in detail and the role of price rigidities was discussed.

The consumers are limited by issues such as market thickness, search costs, perceived quality, perceived importance and defined value of the product. The importance of the market structure is not to be underestimated. For example, in the case of a monopolistic market, where pricing practices such as two-part tariffs are exercised, the consumer is likely to be negatively affected, whereas the monopolist is in a position to generate higher profits.

Price setting behavior is not only a method of profit maximization, but is also an extension of marketing strategies, used to generate and establish a larger market share of any target market. Modern communication mediums such as the Internet and the role of online shopping are not to be taken lightly as a mere marketing tool, but also as a unique pricing strategy. Millions of people are daily communicating with each other, making it cheaper and faster to increase specific product information and to establish a heightened perceived importance and product awareness in consumers. In conjunction with two part tying, or bundling, the objective use of the Internet may be considered an effective pricing strategy.

Alternatively, other pricing strategies such as price lining, and value pricing make market entry far more accessible by undermining the competitor advantage, and at the same time providing consumers with a larger degree of choice. In terms of a highly

competitive South African coffin industry, which is spurred on by the increasing effects of the HIV/AIDS pandemic, pricing strategies are likely to be affected not only by competition, but also by the low levels of income, the high rate of unemployment, the huge diversity of tastes and consumer preferences. Most undertakers offer a bundle of services in order to facilitate for the large cultural diversification in South Africa as part of their pricing strategy, where the coffin falls into the bundle as only a small part of the package.

However, the objectives of the organization need to be well defined in order for the pricing strategies to be used as a sharpened marketing tool. To be effective within the constraints of a competitive market and to achieve a desired goal, a pricing strategy must be developed to suit the interests of both the consumer and the producer.

In chapter three, I analyze and discuss some of South Africa more commonly and readily practiced burial traditions, and those factors are used to motivate and finance the pricing decisions within some of South Africa's traditional cultural establishments.

The significance of the traditional South African religions in the determinant of consumer decision making is a cornerstone of this assignment. South Africa is made up of eleven official languages and an infinite number of diverse cultures, but holistically speaking there is a common thread that runs through most. This thread is the belief in the Ancestral spirit, which actively partakes in our everyday life, and the respect we give relatives and friends in their daily lives, is the same respect and courtesy we extend to them when they die.

However, although the majority of the respondents did not respond positively to a culturally significant burials, the cultural beliefs remain strongly entrenched, and thus it is the determinate of consumer choice. It is this knowledge that drives the undertakers to set policies and instruments in place in order to establish pricing motivation. For example, Cremation is not seriously considered between the traditional South African cultural groups, even though the end cost to the consumer would be much less, than the fees that they are contributing towards the burial at this point in time. On the other side of the coin, consumer driven burial feasts, which places even a greater deal of pressure



on consumers, policies, friends, relatives and societies are traditionally desired, but economically inappropriate.

In the analysis of the financing of these traditions, the motivation behind funeral policies become suspect, the majority of them been targeted at the low-income population groups where the possibility of error remains a matter of time. Coupled with the ever increasing influence of HIV/AIDS and the orphaning of dependents, makes this financial burden seem even more critical when approached holistically.

Financing of funerals is one issue that should not be taken lightly. The high rates of unemployment and huge social demands that are been placed on consumers, are forcing the majority to source funds from the sectors that already feel the financial strain of an economy experiencing the wake of slowing global trends. For example, the pressure placed on the savings of friends and relatives is of major economic concern.

Economically, it would be wise to challenge the traditional customs, and redirect the scarce resources that are being greatly mis-allocated into inappropriate sectors. Therefore, assisting in alleviating some of the economic burden or channeling funds back to the relatives or dependents that require those funds the most. Speculation regarding the burial policy along the lines of providing fewer burials and more for education, food and clothing funds.

In chapter four, I focus on the impact of HIV/AIDS on South Africa and the influence that this pandemic has on the coffin industry.

HIV/AIDS has taken South Africa by storm. Every day, thousands of people become infected, resulting in the mass loss of physical and intellectual capital. The consequences on the country are far from realized, however, the consensus is that there is a great loss of economic potential that may have put South Africa in an unstable position with regard to investor confidence and global economic trends.

The South African coffin industry is without any doubt, influenced by the negative consequences of HIV/AIDS. However, the amplitude and length of the influence of the

HIV/AIDS pandemic is strongly subjective to environmental, geographical, social and cultural characteristics.

Within the coffin industry, there is strong evidence of a near perfect competitive market structure. This includes the players ability to freely enter and leave the market, the low initial start up costs of new enterprises, the inability of competitors to block new rivals using monopolistic pricing strategies or copyrights, near perfect mobility of resources and labor and the inability of established firms to keep the rivals out of the market based on size and experience.

However, the growth in the complimentary industries must not be underestimated, as this provides a springboard for these industries to enter the market, converting scarce resources and services into viable profit incentives. Similarly, the distribution of capital resources are distributed more widely than would alternatively have happened if these industries had not developed or an oligopolistic marker structure was to exist within the coffin industry.

South Africa is the global test zone, regarding the effect of HIV/AIDS and the consequences it has on the economy. The importance that the industry plays in this regard should not be neglected, as the influence effects and consequences that South Africa may experience, can be used to create policy and measures to protect other countries from the wake of such a pandemic.

In chapter five, I discuss a price setting model in the South Africa coffin industry. I analyze the relationship between certain variables in the market economy that are relevant to the price setting behavior present in certain sectors of the South Africa coffin industry. Two factors exhibits a remarkable significant influence, these include specifically the influence of HIV/AIDS and competition within the South African economy.

From this chapter, several points become relevant. Firstly, the manufacturing price of coffins is HIV/AIDS driven. Secondly, the price of coffins is also influenced by competition, that is, the number of manufactures that have entered the market.

Unfortunately, this model does not show the influence of social factors such as the ability to pay, income to savings ratio, household debt and unemployment etc. However, what are apparent are the influence that the HIV/AIDS pandemic has had on South Africa, and the manner in which the market has grown to meet that demand.

Finally, in chapter six, the market survey is discussed. The study of the South African Coffin Industry is unique on two fronts. Firstly, as an industry, it is reasonably understudied, and therefore, as both an economic concern and as a social structure, it requires some immediate attention, especially as it is so greatly influenced by the negative effects of HIV/AIDS. Secondly, from an economic perspective, the industry has an influence on the economy, either through job creation and the influence it has on the unemployment sector, the disposition of incomes of certain social and cultural groups and also the influence it exerts on certain policy and decision makers within the economy.

When gathering data, certain features of available data begin to show gross shortfalls, this includes consumer tastes and preferences, consumer expectations, the cultural values and spending patterns of the consumer. Similarly, the influence of secondary industries on the coffin industry, the influence of substitute products and imports and the role of centralized organizational bodies which direct policy making decision behavior.

This chapter is devoted to the proposition of data gathering via surveys which were directed at the consumers, retailers and producers.

The data collected proved very useful in two ways. Firstly, detailed current information on the coffin industry is very scarce, and many of the essential factors in this dissertation required specific data in order to support many of the facts postulated. The data proved to be extremely valuable in this regard. Secondly, the data collected introduced new questions and opened new doors to further studies. There is much still to be learned from the many diverse consumer driven cultures and retailer responses that exist in the coffin industry. For example, consumer expectations, tastes and preferences are extremely sensitive and dedicated information is difficult to extract.

Economically spoken, much of the data generated was enough to paint a picture of the diverse relationship between the economy and the coffin industry. In some cases, interpretation of the data proved to be exciting and in some cases, literally “mind-blowing”, especially when response categories were opposite to what was expected.

Overall, the challenge of extracting valuable and literally secretive information from many of the respondents was, on its own, a challenge of note. However, the data provided by the respondents proved to be extremely beneficial.

### **7.5 Recommendations**

The main conclusion made from the study is that the influence of HIV/AIDS has overwhelming repercussions on the South African coffin industry. This naturally influences the price setting behavior of manufacturers and undertakers, which is then translated into the consumer behavior, which is highly susceptible to macroeconomic influence.

The consumer is under a constant struggle between social responsibility to the deceased, and financial pressures created within a changing economic climate. Therefore, it is the responsibility of the undertaker to ensure that the services offered to the consumer are fair, culturally correct and designed to meet the needs and financial limitations that the consumer may experience.

The recommendations resulting from this research fall into three main categories:

- Areas of further research.
- Shortcomings in available literature and data.
- The role of policy makers.
- The role of the individual undertaker.

### **7.6 Areas of Further Research**

The study of price determination can be considered a rather ground root level analysis of the industry. As of yet, the coffin industry and related services is greatly understudied, and this is evident in the lack of available literature on the subject.

Despite the existence of anthropological studies on historical traditional burial cultures, most of these have taken a sociological approach.

Therefore, in the interests of further economic analysis of the effects of consumer decision behavior within the coffin industry and its related industries, in line with the broad macroeconomic consequences, there needs to be some further investigation.

The HIV/AIDS pandemic is only at the beginning of its cycle, and although South Africa has been the hardest hit, there are still other countries that will experience the effects of the HIV/AIDS pandemic. Perhaps a study in context of the South African coffin industry in line with similar developing countries needs to be analyzed.

The role of the undertaker is a matter that requires a lot more research in both the areas of financial policy and insurance mechanisms. Consumer incomes, level of unemployment and dependency ratios, all need to be looked at in terms of a current economic analysis. Despite this study, that does look into this in some detail, there is still room for a deeper understanding on the topic.

### **7.7 Shortcomings in Available Literature and Data**

The shortcomings in available literature are twofold. Firstly, there is not enough literature available on the South African coffin industry. This is a significant issue, as with the growth of competitors in the industry, there is not much literature available for them in order to establish a suitable understanding of the industry, or provide them with critical answers to unanswered questions.

Secondly, there is the problem with the integration of available literature. At this stage, there are very specialized parts of literature relating to the industry available on Internet or in libraries. However, integrated literature with overlapping topics such as economics and sociology is still very scarce.

## **7.8 The Role of Policy Makers**

The level of standardization within the South African coffin industry is being naturally controlled by the very presence of consumer cultural, religious and traditional demand factors. These factors have both positive and negative consequences to both the consumer and the government, as discussed earlier.

The role of the policy maker needs to be sensitive to the needs and wants of the consumer, and simultaneously allow for the natural rate of competition within the coffin industry to develop. Perhaps suggestions as to the direction of more suitable burial practices which are more environmentally and economically sustainable may be encouraged, but without harming the natural near perfect competitive market structure that benefits the consumer.

## **7.9 The Role of the Undertaker**

The undertaker is in the crossfire between profit maximization driven by HIV/AIDS and providing a service to the community, which is often shrouded in sadness and loss. Provided the undertaker can tailor the services provided to meet the many diverse demands and circumstances that the individual requires, there should be no judgement passed against him. However, if the services provided do not meet consumer expectations, then a regulatory framework should be put in place in order to regulate these services, provided they do not interfere with the natural workings of the market mechanism.

## **7.10 Conclusion**

This study has attempted to analyze and price setting behavior within the South African coffin industry. It has analyzed the influence of traditional cultures, the influence of HIV/AIDS, the workings of the industry, the market mechanism that is prevalent in the coffin industry. Finally, it builds a model to prove that the effects of HIV/AIDS and competition on price determination within this industry are significant factors.

This research study makes two contributions. Firstly, it sets a platform for further research. Secondly, it applies an area of economic research that has not been previously applied to this industry. Despite the nature of the study topic, it has proven to be interesting and hopefully, the contribution that has been made here will benefit someone, somewhere.



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# Appendix



# **Consumer Survey, A Summary Of the Data Collected**



**Age**

|       |         | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------|-----------|---------|---------------|--------------------|
| Valid | 16-25   | 14        | 11.6    | 11.6          | 11.6               |
|       | 26-35   | 31        | 25.6    | 25.6          | 37.2               |
|       | 36-45   | 27        | 22.3    | 22.3          | 59.5               |
|       | 46-55   | 24        | 19.8    | 19.8          | 79.3               |
|       | 56-65   | 13        | 10.7    | 10.7          | 90.1               |
|       | over 65 | 12        | 9.9     | 9.9           | 100.0              |
|       | Total   | 121       | 100.0   | 100.0         |                    |

**Monthly Income**

|       |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer         | 7         | 5.8     | 5.8           | 5.8                |
|       | unemployed         | 39        | 32.2    | 32.2          | 38.0               |
|       | 1-1500             | 23        | 19.0    | 19.0          | 57.0               |
|       | 1501-3000          | 25        | 20.7    | 20.7          | 77.7               |
|       | 3001-4500          | 20        | 16.5    | 16.5          | 94.2               |
|       | 4501-6000          | 3         | 2.5     | 2.5           | 96.7               |
|       | 7501-9000          | 3         | 2.5     | 2.5           | 99.2               |
|       | Greater than 18000 | 1         | .8      | .8            | 100.0              |
|       | Total              | 121       | 100.0   | 100.0         |                    |

**Marital Status**

|       |         | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------|-----------|---------|---------------|--------------------|
| Valid | Single  | 56        | 46.3    | 46.3          | 46.3               |
|       | Married | 65        | 53.7    | 53.7          | 100.0              |
|       | Total   | 121       | 100.0   | 100.0         |                    |

**Gender**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 2         | 1.7     | 1.7           | 1.7                |
|       | Male       | 62        | 51.2    | 51.2          | 52.9               |
|       | Female     | 57        | 47.1    | 47.1          | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Believe in HIV/AIDS**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 5         | 4.1     | 4.1           | 4.1                |
|       | Yes        | 106       | 87.6    | 87.6          | 91.7               |
|       | No         | 10        | 8.3     | 8.3           | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Number of Children**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | None        | 20        | 16.5    | 16.5          | 16.5               |
|       | 1           | 22        | 18.2    | 18.2          | 34.7               |
|       | 2           | 25        | 20.7    | 20.7          | 55.4               |
|       | 3           | 24        | 19.8    | 19.8          | 75.2               |
|       | 4           | 15        | 12.4    | 12.4          | 87.6               |
|       | 5           | 11        | 9.1     | 9.1           | 96.7               |
|       | More than 5 | 4         | 3.3     | 3.3           | 100.0              |
|       | Total       | 121       | 100.0   | 100.0         |                    |

**Dependent on Salary**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer  | 8         | 6.6     | 6.6           | 6.6                |
|       | None        | 15        | 12.4    | 12.4          | 19.0               |
|       | 1           | 8         | 6.6     | 6.6           | 25.6               |
|       | 2           | 17        | 14.0    | 14.0          | 39.7               |
|       | 3           | 20        | 16.5    | 16.5          | 56.2               |
|       | 4           | 16        | 13.2    | 13.2          | 69.4               |
|       | 5           | 31        | 25.6    | 25.6          | 95.0               |
|       | More than 5 | 6         | 5.0     | 5.0           | 100.0              |
|       | Total       | 121       | 100.0   | 100.0         |                    |

**Home Language**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | English     | 11        | 9.1     | 9.1           | 9.1                |
|       | Afrikaans   | 2         | 1.7     | 1.7           | 10.7               |
|       | Zulu        | 12        | 9.9     | 9.9           | 20.7               |
|       | Xhosa       | 31        | 25.6    | 25.6          | 46.3               |
|       | South Sotho | 15        | 12.4    | 12.4          | 58.7               |
|       | Swazi       | 5         | 4.1     | 4.1           | 62.8               |
|       | Venda       | 4         | 3.3     | 3.3           | 66.1               |
|       | North Sotho | 7         | 5.8     | 5.8           | 71.9               |
|       | Tswana      | 24        | 19.8    | 19.8          | 91.7               |
|       | Shangani    | 4         | 3.3     | 3.3           | 95.0               |
|       | Ndebele     | 6         | 5.0     | 5.0           | 100.0              |
|       | Total       | 121       | 100.0   | 100.0         |                    |

### Highest Education

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered   | 1         | .8      | .8            | .8                 |
|       | Grade 0-6      | 39        | 32.2    | 32.2          | 33.1               |
|       | Grade 6-11     | 27        | 22.3    | 22.3          | 55.4               |
|       | Matric         | 32        | 26.4    | 26.4          | 81.8               |
|       | Student        | 1         | .8      | .8            | 82.6               |
|       | Degree/Diploma | 15        | 12.4    | 12.4          | 95.0               |
|       | Post Graduate  | 1         | .8      | .8            | 95.9               |
|       | Apprentice     | 3         | 2.5     | 2.5           | 98.3               |
|       | Other          | 2         | 1.7     | 1.7           | 100.0              |
|       | Total          | 121       | 100.0   | 100.0         |                    |

### Resident Provence

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Gauteng           | 47        | 38.8    | 38.8          | 38.8               |
|       | Orange Free State | 3         | 2.5     | 2.5           | 41.3               |
|       | Northern Cape     | 1         | .8      | .8            | 42.1               |
|       | KwaZulu Natal     | 8         | 6.6     | 6.6           | 48.8               |
|       | Eastern Cape      | 27        | 22.3    | 22.3          | 71.1               |
|       | Nothern Province  | 18        | 14.9    | 14.9          | 86.0               |
|       | North West        | 17        | 14.0    | 14.0          | 100.0              |
|       | Total             | 121       | 100.0   | 100.0         |                    |

### Occupation

|       |                        | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------------------|-----------|---------|---------------|--------------------|
| Valid | Unemployed             | 29        | 24.0    | 24.0          | 24.0               |
|       | Construction Industry  | 3         | 2.5     | 2.5           | 26.4               |
|       | Information Technology | 15        | 12.4    | 12.4          | 38.8               |
|       | Health Services        | 4         | 3.3     | 3.3           | 42.1               |
|       | Education              | 11        | 9.1     | 9.1           | 51.2               |
|       | Government Services    | 5         | 4.1     | 4.1           | 55.4               |
|       | Mining Industry        | 4         | 3.3     | 3.3           | 58.7               |
|       | Retail Industry        | 2         | 1.7     | 1.7           | 60.3               |
|       | Transport Industry     | 1         | .8      | .8            | 61.2               |
|       | Business and Commerce  | 8         | 6.6     | 6.6           | 67.8               |
|       | Security               | 14        | 11.6    | 11.6          | 79.3               |
|       | Other                  | 25        | 20.7    | 20.7          | 100.0              |
|       | Total                  | 121       | 100.0   | 100.0         |                    |

**Funeral Insurance or Policy**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 2         | 1.7     | 1.7           | 1.7                |
|       | Yes        | 77        | 63.6    | 63.6          | 65.3               |
|       | No         | 42        | 34.7    | 34.7          | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Contribution every month**

|       |               | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer    | 41        | 33.9    | 33.9          | 33.9               |
|       | 20 or less    | 3         | 2.5     | 2.5           | 36.4               |
|       | 21-40         | 16        | 13.2    | 13.2          | 49.6               |
|       | 41-60         | 12        | 9.9     | 9.9           | 59.5               |
|       | 61-100        | 12        | 9.9     | 9.9           | 69.4               |
|       | 101-200       | 16        | 13.2    | 13.2          | 82.6               |
|       | 201-400       | 15        | 12.4    | 12.4          | 95.0               |
|       | more than 400 | 6         | 5.0     | 5.0           | 100.0              |
|       | Total         | 121       | 100.0   | 100.0         |                    |

**Dependents covered by policy**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer  | 39        | 32.2    | 32.2          | 32.2               |
|       | None        | 7         | 5.8     | 5.8           | 38.0               |
|       | 1           | 5         | 4.1     | 4.1           | 42.1               |
|       | 2           | 11        | 9.1     | 9.1           | 51.2               |
|       | 3           | 19        | 15.7    | 15.7          | 66.9               |
|       | 4           | 9         | 7.4     | 7.4           | 74.4               |
|       | 5           | 24        | 19.8    | 19.8          | 94.2               |
|       | More than 5 | 7         | 5.8     | 5.8           | 100.0              |
|       | Total       | 121       | 100.0   | 100.0         |                    |

**Recently purchased a coffin**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | Yes   | 119       | 98.3    | 98.3          | 98.3               |
|       | No    | 2         | 1.7     | 1.7           | 100.0              |
|       | Total | 121       | 100.0   | 100.0         |                    |

### How recently

|       |                       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------------|-----------|---------|---------------|--------------------|
| Valid | less than 6 months    | 19        | 15.7    | 15.7          | 15.7               |
|       | 1 year                | 33        | 27.3    | 27.3          | 43.0               |
|       | 18 months             | 9         | 7.4     | 7.4           | 50.4               |
|       | 2 years               | 27        | 22.3    | 22.3          | 72.7               |
|       | 2.5 years             | 12        | 9.9     | 9.9           | 82.6               |
|       | 3 years               | 19        | 15.7    | 15.7          | 98.3               |
|       | more than three years | 2         | 1.7     | 1.7           | 100.0              |
|       | Total                 | 121       | 100.0   | 100.0         |                    |

### Were the costs covered by policy

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered | 15        | 12.4    | 12.4          | 12.4               |
|       | Yes          | 74        | 61.2    | 61.2          | 73.6               |
|       | No           | 26        | 21.5    | 21.5          | 95.0               |
|       | Partially    | 6         | 5.0     | 5.0           | 100.0              |
|       | Total        | 121       | 100.0   | 100.0         |                    |



### Type of Coffin

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered | 1         | .8      | .8            | .8                 |
|       | Fibreboard   | 3         | 2.5     | 2.5           | 3.3                |
|       | Pressboard   | 11        | 9.1     | 9.1           | 12.4               |
|       | Wooden       | 96        | 79.3    | 79.3          | 91.7               |
|       | Steel        | 9         | 7.4     | 7.4           | 99.2               |
|       | Blanket      | 1         | .8      | .8            | 100.0              |
|       | Total        | 121       | 100.0   | 100.0         |                    |

### Imported

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 1         | .8      | .8            | .8                 |
|       | Yes        | 27        | 22.3    | 22.3          | 23.1               |
|       | No         | 87        | 71.9    | 71.9          | 95.0               |
|       | Dont Know  | 6         | 5.0     | 5.0           | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |



**Cremation**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 3         | 2.5     | 2.5           | 2.5                |
|       | Yes        | 20        | 16.5    | 16.5          | 19.0               |
|       | No         | 98        | 81.0    | 81.0          | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Culturally Significant**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 4         | 3.3     | 3.3           | 3.3                |
|       | Yes        | 32        | 26.4    | 26.4          | 29.8               |
|       | No         | 85        | 70.2    | 70.2          | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Shape**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer   | 1         | .8      | .8            | .8                 |
|       | Coffin Shape | 101       | 83.5    | 83.5          | 84.3               |
|       | Casket Shape | 17        | 14.0    | 14.0          | 98.3               |
|       | 3            | 2         | 1.7     | 1.7           | 100.0              |
|       | Total        | 121       | 100.0   | 100.0         |                    |

**Color**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered | 2         | 1.7     | 1.7           | 1.7                |
|       | Wood Finish  | 92        | 76.0    | 76.0          | 77.7               |
|       | Steel Finish | 9         | 7.4     | 7.4           | 85.1               |
|       | Black        | 8         | 6.6     | 6.6           | 91.7               |
|       | White        | 9         | 7.4     | 7.4           | 99.2               |
|       | Laminate     | 1         | .8      | .8            | 100.0              |
|       | Total        | 121       | 100.0   | 100.0         |                    |

**Cost of Coffin**

|       |               | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer    | 4         | 3.3     | 3.3           | 3.3                |
|       | less than 500 | 11        | 9.1     | 9.1           | 12.4               |
|       | 501-1000      | 5         | 4.1     | 4.1           | 16.5               |
|       | 1001-1500     | 8         | 6.6     | 6.6           | 23.1               |
|       | 1501-2000     | 23        | 19.0    | 19.0          | 42.1               |
|       | 2001-2500     | 23        | 19.0    | 19.0          | 61.2               |
|       | 2501-3000     | 8         | 6.6     | 6.6           | 67.8               |
|       | 3001-3500     | 7         | 5.8     | 5.8           | 73.6               |
|       | 3501-4000     | 12        | 9.9     | 9.9           | 83.5               |
|       | 4501-5000     | 6         | 5.0     | 5.0           | 88.4               |
|       | 5001-6000     | 5         | 4.1     | 4.1           | 92.6               |
|       | 6501-7000     | 4         | 3.3     | 3.3           | 95.9               |
|       | 7001-7500     | 2         | 1.7     | 1.7           | 97.5               |
|       | 7501-8000     | 2         | 1.7     | 1.7           | 99.2               |
|       | Other         | 1         | .8      | .8            | 100.0              |
|       | Total         | 121       | 100.0   | 100.0         |                    |

**Allocated an Undertaker**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 27        | 22.3    | 22.3          | 22.3               |
|       | Allocated  | 35        | 28.9    | 28.9          | 51.2               |
|       | No         | 59        | 48.8    | 48.8          | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Satisfied with Funeral Insurance**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 26        | 21.5    | 21.5          | 21.5               |
|       | Yes        | 87        | 71.9    | 71.9          | 93.4               |
|       | No         | 8         | 6.6     | 6.6           | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Satisfied with Undertaker**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not Answer | 12        | 9.9     | 9.9           | 9.9                |
|       | Yes        | 102       | 84.3    | 84.3          | 94.2               |
|       | No         | 7         | 5.8     | 5.8           | 100.0              |
|       | Total      | 121       | 100.0   | 100.0         |                    |

**Policy Payed by Employer**

|       |               | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered  | 24        | 19.8    | 19.8          | 19.8               |
|       | Yes           | 32        | 26.4    | 26.4          | 46.3               |
|       | No            | 40        | 33.1    | 33.1          | 79.3               |
|       | Self Employed | 13        | 10.7    | 10.7          | 90.1               |
|       | Unemployed    | 12        | 9.9     | 9.9           | 100.0              |
|       | Total         | 121       | 100.0   | 100.0         |                    |

**Pay for funeral from savings**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not Answered | 100       | 82.6    | 82.6          | 82.6               |
|       | Savings      | 21        | 17.4    | 17.4          | 100.0              |
|       | Total        | 121       | 100.0   | 100.0         |                    |

**Pay for funeral with help of friends**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 110       | 90.9    | 90.9          | 90.9               |
|       | Yes   | 11        | 9.1     | 9.1           | 100.0              |
|       | Total | 121       | 100.0   | 100.0         |                    |

**Pay for funeral with help of family**

|         |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid   | No     | 97        | 80.2    | 80.8          | 80.8               |
|         | Yes    | 23        | 19.0    | 19.2          | 100.0              |
|         | Total  | 120       | 99.2    | 100.0         |                    |
| Missing | System | 1         | .8      |               |                    |
|         | Total  | 121       | 100.0   |               |                    |

**Pay for funeral with help of bank loan**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 113       | 93.4    | 93.4          | 93.4               |
|       | Yes   | 8         | 6.6     | 6.6           | 100.0              |
|       | Total | 121       | 100.0   | 100.0         |                    |

**Pay for funeral with help of society**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 72        | 59.5    | 59.5          | 59.5               |
|       | Yes   | 49        | 40.5    | 40.5          | 100.0              |
|       | Total | 121       | 100.0   | 100.0         |                    |

**Pay for funeral with help of church**

|         |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid   | No     | 116       | 95.9    | 96.7          | 96.7               |
|         | Yes    | 4         | 3.3     | 3.3           | 100.0              |
|         | Total  | 120       | 99.2    | 100.0         |                    |
| Missing | System | 1         | .8      |               |                    |
| Total   |        | 121       | 100.0   |               |                    |

**Pay for funeral with help of employer**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 108       | 89.3    | 89.3          | 89.3               |
|       | Yes | 13        | 10.7    | 10.7          | 100.0              |
| Total |     | 121       | 100.0   | 100.0         |                    |

**Pay for funeral with other help**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 118       | 97.5    | 97.5          | 97.5               |
|       | Yes | 3         | 2.5     | 2.5           | 100.0              |
| Total |     | 121       | 100.0   | 100.0         |                    |

**The cost of entire funeral**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |  |
|-------|--------------|-----------|---------|---------------|--------------------|--|
| Valid | Not Answered | 1         | .8      | .8            | .8                 |  |
|       | 1-1500       | 4         | 3.3     | 3.3           | 4.1                |  |
|       | 1501-3000    | 20        | 16.5    | 16.5          | 20.7               |  |
|       | 3001-4500    | 9         | 7.4     | 7.4           | 28.1               |  |
|       | 4501-6000    | 27        | 22.3    | 22.3          | 50.4               |  |
|       | 6001-7500    | 18        | 14.9    | 14.9          | 65.3               |  |
|       | 7501-9000    | 17        | 14.0    | 14.0          | 79.3               |  |
|       | 9001-10500   | 10        | 8.3     | 8.3           | 87.6               |  |
|       | 10501-12000  | 3         | 2.5     | 2.5           | 90.1               |  |
|       | 12001-13500  | 3         | 2.5     | 2.5           | 92.6               |  |
|       | 13501-15000  | 1         | .8      | .8            | 93.4               |  |
|       | 15001-16500  | 2         | 1.7     | 1.7           | 95.0               |  |
|       | 16501-18000  | 2         | 1.7     | 1.7           | 96.7               |  |
|       | 18001-19500  | 1         | .8      | .8            | 97.5               |  |
|       | Other        | 2         | 1.7     | 1.7           | 99.2               |  |
|       | 18           | 1         | .8      | .8            | 100.0              |  |
|       | Total        |           | 121     | 100.0         | 100.0              |  |

**Area of sample**

|       |                  | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------------|-----------|---------|---------------|--------------------|
| Valid | Gauteng          | 49        | 40.5    | 40.5          | 40.5               |
|       | Mafikeng         | 15        | 12.4    | 12.4          | 52.9               |
|       | Pietersburg      | 21        | 17.4    | 17.4          | 70.2               |
|       | Pietermaritzburg | 11        | 9.1     | 9.1           | 79.3               |
|       | East London      | 25        | 20.7    | 20.7          | 100.0              |
|       | Total            | 121       | 100.0   | 100.0         |                    |



# **Undertaker Survey A Summary Of the Data Collected**



**Producer or Undertaker**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 1         | 1.7     | 1.7           | 1.7                |
|       | Produce    | 2         | 3.3     | 3.3           | 5.0                |
|       | Undertaker | 34        | 56.7    | 56.7          | 61.7               |
|       | Both       | 23        | 38.3    | 38.3          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Do you import coffins**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 1         | 1.7     | 1.7           | 1.7                |
|       | Yes        | 12        | 20.0    | 20.0          | 21.7               |
|       | No         | 47        | 78.3    | 78.3          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Country from where the coffins are imported**

|       |               | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | No            | 48        | 80.0    | 80.0          | 80.0               |
|       | North America | 10        | 16.7    | 16.7          | 96.7               |
|       | Africa        | 1         | 1.7     | 1.7           | 98.3               |
|       | Europe        | 1         | 1.7     | 1.7           | 100.0              |
|       | Total         | 60        | 100.0   | 100.0         |                    |

**Number of people employed**

|       |                 | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Not answer      | 1         | 1.7     | 1.7           | 1.7                |
|       | Less than Three | 6         | 10.0    | 10.0          | 11.7               |
|       | 3 to 6          | 18        | 30.0    | 30.0          | 41.7               |
|       | 6 to 9          | 9         | 15.0    | 15.0          | 56.7               |
|       | 9 to 12         | 9         | 15.0    | 15.0          | 71.7               |
|       | 12 to 15        | 7         | 11.7    | 11.7          | 83.3               |
|       | 15 to 18        | 5         | 8.3     | 8.3           | 91.7               |
|       | More than 18    | 4         | 6.7     | 6.7           | 98.3               |
|       | 8               | 1         | 1.7     | 1.7           | 100.0              |
|       | Total           | 60        | 100.0   | 100.0         |                    |

**Where is business situated**

|       |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Not answer         | 1         | 1.7     | 1.7           | 1.7                |
|       | Gauteng            | 19        | 31.7    | 31.7          | 33.3               |
|       | Orange Free State  | 3         | 5.0     | 5.0           | 38.3               |
|       | Nothern Cape       | 2         | 3.3     | 3.3           | 41.7               |
|       | KwaZulu Natal      | 7         | 11.7    | 11.7          | 53.3               |
|       | Eastern Cape       | 5         | 8.3     | 8.3           | 61.7               |
|       | Western Cape       | 15        | 25.0    | 25.0          | 86.7               |
|       | Mpumalanga         | 1         | 1.7     | 1.7           | 88.3               |
|       | Nort West Province | 7         | 11.7    | 11.7          | 100.0              |
|       | Total              | 60        | 100.0   | 100.0         |                    |

**Market province**

|       |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Gauteng            | 21        | 35.0    | 35.0          | 35.0               |
|       | Orange Free State  | 3         | 5.0     | 5.0           | 40.0               |
|       | Nothern Cape       | 2         | 3.3     | 3.3           | 43.3               |
|       | KwaZulu Natal      | 6         | 10.0    | 10.0          | 53.3               |
|       | Eastern Cape       | 4         | 6.7     | 6.7           | 60.0               |
|       | Western Cape       | 16        | 26.7    | 26.7          | 86.7               |
|       | Mpumalanga         | 1         | 1.7     | 1.7           | 88.3               |
|       | Nort West Province | 7         | 11.7    | 11.7          | 100.0              |
|       | Total              | 60        | 100.0   | 100.0         |                    |

**Produce or Retail**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 1         | 1.7     | 1.7           | 1.7                |
|       | Produce    | 2         | 3.3     | 3.3           | 5.0                |
|       | Retail     | 37        | 61.7    | 61.7          | 66.7               |
|       | Both       | 20        | 33.3    | 33.3          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Coffin or Casket**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 1         | 1.7     | 1.7           | 1.7                |
|       | Coffin     | 1         | 1.7     | 1.7           | 3.3                |
|       | Casket     | 4         | 6.7     | 6.7           | 10.0               |
|       | Both       | 54        | 90.0    | 90.0          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |



**Coffin manufactured in Fibreboard**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 16        | 26.7    | 26.7          | 26.7               |
|       | Yes | 44        | 73.3    | 73.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Coffin manufactured in Pressboard**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 11        | 18.3    | 18.3          | 18.3               |
|       | Yes | 49        | 81.7    | 81.7          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Coffin manufactured in Superboard**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 14        | 23.3    | 23.3          | 23.3               |
|       | Yes | 46        | 76.7    | 76.7          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Coffin manufactured in Wood**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 10        | 16.7    | 16.7          | 16.7               |
|       | Yes | 50        | 83.3    | 83.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Coffin manufactured in Steel**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 19        | 31.7    | 31.7          | 31.7               |
|       | Yes | 41        | 68.3    | 68.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Is coffin bundled or stand alone**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not answer  | 1         | 1.7     | 1.7           | 1.7                |
|       | Stand Alone | 5         | 8.3     | 8.3           | 10.0               |
|       | Bundled     | 15        | 25.0    | 25.0          | 35.0               |
|       | Either      | 39        | 65.0    | 65.0          | 100.0              |
|       | Total       | 60        | 100.0   | 100.0         |                    |

**Influence of HIV/AIDS**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 3         | 5.0     | 5.0           | 5.0                |
|       | Yes        | 28        | 46.7    | 46.7          | 51.7               |
|       | No         | 29        | 48.3    | 48.3          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**To what degree do you feel effect of H/A**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not answer  | 5         | 8.3     | 8.3           | 8.3                |
|       | Nothing     | 14        | 23.3    | 23.3          | 31.7               |
|       | Very slight | 15        | 25.0    | 25.0          | 56.7               |
|       | Slight      | 2         | 3.3     | 3.3           | 60.0               |
|       | Mild        | 6         | 10.0    | 10.0          | 70.0               |
|       | Moderate    | 7         | 11.7    | 11.7          | 81.7               |
|       | Strong      | 6         | 10.0    | 10.0          | 91.7               |
|       | Very Strong | 5         | 8.3     | 8.3           | 100.0              |
|       | Total       | 60        | 100.0   | 100.0         |                    |

**Are imports competitive**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 5         | 8.3     | 8.3           | 8.3                |
|       | Yes        | 10        | 16.7    | 16.7          | 25.0               |
|       | No         | 45        | 75.0    | 75.0          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Are imports noticeable on market share**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not answer  | 5         | 8.3     | 8.3           | 8.3                |
|       | Nothing     | 33        | 55.0    | 55.0          | 63.3               |
|       | Very slight | 15        | 25.0    | 25.0          | 88.3               |
|       | Slight      | 3         | 5.0     | 5.0           | 93.3               |
|       | Mild        | 1         | 1.7     | 1.7           | 95.0               |
|       | Strong      | 2         | 3.3     | 3.3           | 98.3               |
|       | Very Strong | 1         | 1.7     | 1.7           | 100.0              |
|       | Total       | 60        | 100.0   | 100.0         |                    |

**Cost to produce an average coffin**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 52        | 86.7    | 86.7          | 86.7               |
|       | 100-200    | 1         | 1.7     | 1.7           | 88.3               |
|       | 200-300    | 5         | 8.3     | 8.3           | 96.7               |
|       | 400-500    | 1         | 1.7     | 1.7           | 98.3               |
|       | 5          | 1         | 1.7     | 1.7           | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Retail price of an average coffin**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 13        | 21.7    | 21.7          | 21.7               |
|       | 600-700    | 10        | 16.7    | 16.7          | 38.3               |
|       | 700-800    | 4         | 6.7     | 6.7           | 45.0               |
|       | 800-900    | 5         | 8.3     | 8.3           | 53.3               |
|       | 900-1000   | 8         | 13.3    | 13.3          | 66.7               |
|       | 1000-1100  | 5         | 8.3     | 8.3           | 75.0               |
|       | 1200-1300  | 1         | 1.7     | 1.7           | 76.7               |
|       | 8          | 10        | 16.7    | 16.7          | 93.3               |
|       | 9          | 4         | 6.7     | 6.7           | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Amount of average coffins supplied monthly**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Nor answered | 19        | 31.7    | 31.7          | 31.7               |
|       | 1-5          | 2         | 3.3     | 3.3           | 35.0               |
|       | 6-10         | 4         | 6.7     | 6.7           | 41.7               |
|       | 11-15        | 6         | 10.0    | 10.0          | 51.7               |
|       | 16-20        | 8         | 13.3    | 13.3          | 65.0               |
|       | 21-25        | 2         | 3.3     | 3.3           | 68.3               |
|       | 25-30        | 10        | 16.7    | 16.7          | 85.0               |
|       | 8            | 9         | 15.0    | 15.0          | 100.0              |
|       | Total        | 60        | 100.0   | 100.0         |                    |

**Cost to produce pauper coffin**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 50        | 83.3    | 83.3          | 83.3               |
|       | 0-100      | 1         | 1.7     | 1.7           | 85.0               |
|       | 100-200    | 3         | 5.0     | 5.0           | 90.0               |
|       | 200-300    | 4         | 6.7     | 6.7           | 96.7               |
|       | 400-500    | 2         | 3.3     | 3.3           | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Retail price of an average pauper coffin**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 27        | 45.0    | 45.0          | 45.0               |
|       | 300-400    | 23        | 38.3    | 38.3          | 83.3               |
|       | 400-500    | 3         | 5.0     | 5.0           | 88.3               |
|       | 500-600    | 2         | 3.3     | 3.3           | 91.7               |
|       | 600-700    | 4         | 6.7     | 6.7           | 98.3               |
|       | 800-900    | 1         | 1.7     | 1.7           | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Amount of pauper coffins supplied monthly**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Nor answered | 32        | 53.3    | 53.3          | 53.3               |
|       | None         | 2         | 3.3     | 3.3           | 56.7               |
|       | 1-5          | 10        | 16.7    | 16.7          | 73.3               |
|       | 6-10         | 5         | 8.3     | 8.3           | 81.7               |
|       | 11-15        | 2         | 3.3     | 3.3           | 85.0               |
|       | 16-20        | 2         | 3.3     | 3.3           | 88.3               |
|       | 25-30        | 1         | 1.7     | 1.7           | 90.0               |
|       | 8            | 6         | 10.0    | 10.0          | 100.0              |
|       | Total        | 60        | 100.0   | 100.0         |                    |

**Total ammount of coffins sold monthly**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Nor answered | 46        | 76.7    | 76.7          | 76.7               |
|       | 6-10         | 1         | 1.7     | 1.7           | 78.3               |
|       | 11-15        | 3         | 5.0     | 5.0           | 83.3               |
|       | 21-25        | 4         | 6.7     | 6.7           | 90.0               |
|       | 25-30        | 1         | 1.7     | 1.7           | 91.7               |
|       | 8            | 5         | 8.3     | 8.3           | 100.0              |
|       | Total        | 60        | 100.0   | 100.0         |                    |

**Do you set your own price**

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Not answered      | 2         | 3.3     | 3.3           | 3.3                |
|       | Own price         | 46        | 76.7    | 76.7          | 80.0               |
|       | Competitors Price | 12        | 20.0    | 20.0          | 100.0              |
|       | Total             | 60        | 100.0   | 100.0         |                    |

**Choice of consumer, if insured**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 3         | 5.0     | 5.0           | 5.0                |
|       | Consumer   | 46        | 76.7    | 76.7          | 81.7               |
|       | Policy     | 5         | 8.3     | 8.3           | 90.0               |
|       | Either     | 6         | 10.0    | 10.0          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**How do your prices compare**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 5         | 8.3     | 8.3           | 8.3                |
|       | Cheaper    | 33        | 55.0    | 55.0          | 63.3               |
|       | Similar    | 22        | 36.7    | 36.7          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Client base**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 6         | 10.0    | 10.0          | 10.0               |
|       | White      | 13        | 21.7    | 21.7          | 31.7               |
|       | Black      | 31        | 51.7    | 51.7          | 83.3               |
|       | Colored    | 10        | 16.7    | 16.7          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Demgraphic spread**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 3         | 5.0     | 5.0           | 5.0                |
|       | Men        | 9         | 15.0    | 15.0          | 20.0               |
|       | Either     | 31        | 51.7    | 51.7          | 71.7               |
|       | Woman      | 17        | 28.3    | 28.3          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Interest in cremation**

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Not answer  | 8         | 13.3    | 13.3          | 13.3               |
|       | Nothing     | 12        | 20.0    | 20.0          | 33.3               |
|       | Very slight | 13        | 21.7    | 21.7          | 55.0               |
|       | Slight      | 4         | 6.7     | 6.7           | 61.7               |
|       | Mild        | 2         | 3.3     | 3.3           | 65.0               |
|       | Moderate    | 5         | 8.3     | 8.3           | 73.3               |
|       | Strong      | 7         | 11.7    | 11.7          | 85.0               |
|       | Very Strong | 9         | 15.0    | 15.0          | 100.0              |
|       | Total       | 60        | 100.0   | 100.0         |                    |

**Services provided**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 60        | 100.0   | 100.0         | 100.0              |

**Are services similar**

|       |            | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------|-----------|---------|---------------|--------------------|
| Valid | Not answer | 16        | 26.7    | 26.7          | 26.7               |
|       | Different  | 20        | 33.3    | 33.3          | 60.0               |
|       | Similar    | 24        | 40.0    | 40.0          | 100.0              |
|       | Total      | 60        | 100.0   | 100.0         |                    |

**Outsource Coffin**

|       |    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----|-----------|---------|---------------|--------------------|
| Valid | No | 60        | 100.0   | 100.0         | 100.0              |

**Outsource Herse**

|       |    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----|-----------|---------|---------------|--------------------|
| Valid | No | 60        | 100.0   | 100.0         | 100.0              |

**Outsource Family Car**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 49        | 81.7    | 81.7          | 81.7               |
|       | Yes   | 11        | 18.3    | 18.3          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Flowers**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 32        | 53.3    | 53.3          | 53.3               |
|       | Yes   | 28        | 46.7    | 46.7          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Legal Documents**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 57        | 95.0    | 95.0          | 95.0               |
|       | Yes   | 3         | 5.0     | 5.0           | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Storage Facilities**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 56        | 93.3    | 93.3          | 93.3               |
|       | Yes | 4         | 6.7     | 6.7           | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Outsource Catering**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 24        | 40.0    | 40.0          | 40.0               |
|       | Yes | 36        | 60.0    | 60.0          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Outsource Tent**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 34        | 56.7    | 56.7          | 56.7               |
|       | Yes | 26        | 43.3    | 43.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Outsource Bus**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 15        | 25.0    | 25.0          | 25.0               |
|       | Yes | 45        | 75.0    | 75.0          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Outsource Grave stone**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 34        | 56.7    | 56.7          | 56.7               |
|       | Yes | 26        | 43.3    | 43.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Outsource Cremation**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 30        | 50.0    | 50.0          | 50.0               |
|       | Yes | 30        | 50.0    | 50.0          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Church Service**

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | No  | 37        | 61.7    | 61.7          | 61.7               |
|       | Yes | 23        | 38.3    | 38.3          | 100.0              |
| Total |     | 60        | 100.0   | 100.0         |                    |

**Memorial Service**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 38        | 63.3    | 63.3          | 63.3               |
|       | Yes   | 22        | 36.7    | 36.7          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Earn**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 56        | 93.3    | 93.3          | 93.3               |
|       | Yes   | 4         | 6.7     | 6.7           | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Mortition Service**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 50        | 83.3    | 83.3          | 83.3               |
|       | Yes   | 10        | 16.7    | 16.7          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Outsource Credit Extention**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 55        | 91.7    | 91.7          | 91.7               |
|       | Yes   | 5         | 8.3     | 8.3           | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Underwritten Policy**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 49        | 81.7    | 81.7          | 81.7               |
|       | Yes   | 11        | 18.3    | 18.3          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Underwritten Insurance**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 48        | 80.0    | 80.0          | 80.0               |
|       | Yes   | 12        | 20.0    | 20.0          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Obituary**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 59        | 98.3    | 98.3          | 98.3               |
|       | Yes   | 1         | 1.7     | 1.7           | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |



**Outsource Tabeis and Chairs**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 34        | 56.7    | 56.7          | 56.7               |
|       | Yes   | 26        | 43.3    | 43.3          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Difficulty to find burial space**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Not answer   | 2         | 3.3     | 3.3           | 3.3                |
|       | Never        | 36        | 60.0    | 60.0          | 63.3               |
|       | Very Seldom  | 5         | 8.3     | 8.3           | 71.7               |
|       | Seldom       | 3         | 5.0     | 5.0           | 76.7               |
|       | Occasionally | 2         | 3.3     | 3.3           | 80.0               |
|       | Moderate     | 1         | 1.7     | 1.7           | 81.7               |
|       | Often        | 4         | 6.7     | 6.7           | 88.3               |
|       | Very Often   | 7         | 11.7    | 11.7          | 100.0              |
|       | Total        | 60        | 100.0   | 100.0         |                    |

**Association provide advertising services**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 40        | 66.7    | 66.7          | 66.7               |
|       | Yes   | 20        | 33.3    | 33.3          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Association provide information**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 47        | 78.3    | 78.3          | 78.3               |
|       | Yes   | 13        | 21.7    | 21.7          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Association provide Legal services**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 42        | 70.0    | 70.0          | 70.0               |
|       | Yes   | 18        | 30.0    | 30.0          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Association provide Administrative services**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 54        | 90.0    | 90.0          | 90.0               |
|       | Yes   | 6         | 10.0    | 10.0          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Association set prices**

|         |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid   | No     | 47        | 78.3    | 79.7          | 79.7               |
|         | Yes    | 12        | 20.0    | 20.3          | 100.0              |
|         | Total  | 59        | 98.3    | 100.0         |                    |
| Missing | System | 1         | 1.7     |               |                    |
| Total   |        | 60        | 100.0   |               |                    |

**Association refer customers**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 45        | 75.0    | 75.0          | 75.0               |
|       | Yes   | 15        | 25.0    | 25.0          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |

**Association provides representation**

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | No    | 31        | 51.7    | 51.7          | 51.7               |
|       | Yes   | 29        | 48.3    | 48.3          | 100.0              |
|       | Total | 60        | 100.0   | 100.0         |                    |



# **General Correspondence**

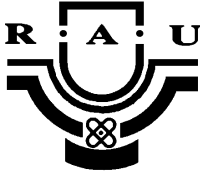
**A Sample of the Correspondence Provided**

**To those who assisted in data collection**

**and**

**Letter of confidentiality to the Undertakers.**





**RANDSE AFRIKAANSE UNIVERSITEIT**  
**Department of Economics**

August 31, 2001

**TERRENCE STEVENSON**

128 12<sup>th</sup> Avenue  
Gonubie  
5256

Dear Terry

Thank you so much for assisting in the distribution of these question papers. The whole idea behind this research is not for profit, or even to determine a competitive market approach from which to launch a business, but rather to determine how or why the market works the way it does. Very little, if anything has ever been done in this field before, well at least not formally.

Generally, there has been little resistance from those who have been approached to answer these questions, yet every now and again, a question sheet is returned with impossible answers. The idea naturally, is to ensure that the recipients are asked to answer the questions as honestly as possible. It might help to stress that all information gathered is strictly confidential, no name or identification is necessary.

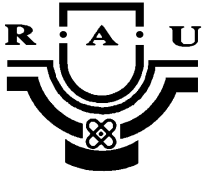
However, if certain people decide that this question paper may have some dubious origin, then please let them contact me at 011-763-2911, and I will then forward, if necessary, additional references from the university.

The problem so far is to be able to get a uniform distribution across the country, and hell, from Johannesburg, that is a challenge. At this stage, sample areas include, Gauteng: Johannesburg, Soweto. Northern Province: Pietersburg. Western Cape: Cape Town. Eastern Cape: East London. Natal: Pietermaritzburg. I am still hoping to find contacts in the North West Province: Mafikeng, Free State: Bloemfontein, Northern Cape: Kimberly.

Thank you again for helping with the research, there is truly so much to be learned from the answers generated from this survey. If there are any questions or problems that may arise, please do not hesitate to contact me at any time. Home Tel/Fax: 011 763-2911, Cell: 082-925-5904, Pager: 088-000-1639.

Peter Baur





**RANDSE AFRIKAANSE UNIVERSITEIT**  
**Department of Economics**

**TO WHOM IT MAY CONCERN**

**Statement of confidentiality:**

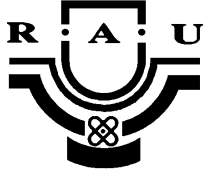
This letter is to confirm that Mr. P.W. Baur is currently a masters student in the department of Economics at the Randse Afrikaanse Universiteit.

All information obtained from the survey will be kept strictly private and confidential, and the use thereof shall be solely for the purpose of academia. At no stage will the companies interviewed in this survey be listed or mentioned. Any information derived from the survey will not be used for any other purpose other than that required for the purpose of this study.

If there are any questions that you may have or if you wish to address a specific issue regarding the propose or contents of the survey, then please contact Peter Baur at 011-763-2911, or his Professor, Prof. G van Zyl at 011-489-2046.

Regards

**PROF. G. VAN ZYL**



**RANDSE AFRIKAANSE UNIVERSITEIT**  
**Department of Economics**

**To:** Whom it may concern

**Re: Research survey presented by Peter Baur**

Dear Sir or Madam

This forwarding letter is to confirm that at present I am engaged in an academic study of the South African coffin industry. The research is in no way intended for any other purpose, other than that of an economic analysis of the workings, motivation, determination and influence that the coffin industry has, within the South African economy.



At present, South Africa is globally one of the highest HIV/AIDS affected countries, in conjunction with other SADC countries, such as Botswana, Zambia, Zimbabwe, Mozambique and Angola. Naturally, the influence of Tuberculosis, Malaria, Cholera and a group of other deadly diseases only assist in compounding the problem. These factors affect the coffin industry, resulting in the establishment of new businesses and the strengthening and streamlining of the more established businesses that have previously serviced this sector. Naturally, the coffin industry is not a standalone entity, but its influence is made evident through services that it contracts to other sectors. This influence demands certain attention in this study.

Unfortunately, there is not much academic literature on the subject, therefore the majority of the analysis is going to be based on information collected in the surveys. The surveys are two fold, namely, the demand and the supply side. The demand side,

which focuses on the consumer, was tackled using a questionnaire that was distributed across the country to those whom have been involved within the last three years in the purchase of a coffin. The supply side focuses on the producer and the undertaker. These question surveys are telephonically conducted, and a copy of this letter, together with a letter of confidentiality from the University, namely The Department of Economics, is then forwarded to the respondent. All information is kept strictly confidential.

Your assistance in this regard is a necessity if any meaningful data is to be gathered in order to analyze the industry. The telephonic questionnaire should take approximately five minutes and your time and contribution will be very much appreciated. If there are any questions that you may have regarding this study, then please contact myself, at (011) 763-2911, or Prof. G. van Zyl, Department of Economics, RAU, (011) 489-2911.

Regards

Peter Baur





# **Quantitative Model Data**

**Tests and Data  
Used in the Construction of the Quantitative Model**



# HIV/AIDS

| Series  | Unit | Price    | AIDS    | Forecast | e        | e^2      | A. Ch. | P. Ch    | (P-A)^2  | A^2      | (e2-e1)  | (e2-e1)^2 | e^2      |   |
|---------|------|----------|---------|----------|----------|----------|--------|----------|----------|----------|----------|-----------|----------|---|
| 1Q 1991 | 1    | 179.5    | 0.28125 | 209.8482 | -30.3482 | 921.0135 |        |          |          |          |          |           |          |   |
| 2Q 1991 | 2    | 184.575  | 0.3125  | 210.5337 | -25.9587 | 673.8539 | 5.075  | 0.685492 | 19.26778 | 25.75562 | 4.389508 | 19.26778  | 673.8539 |   |
| 3Q 1991 | 3    | 189.65   | 0.34375 | 211.2192 | -21.5692 | 465.2298 | 5.075  | 0.685492 | 19.26778 | 25.75563 | 4.389508 | 19.26778  | 465.2298 |   |
| 4Q 1991 | 4    | 194.725  | 0.375   | 211.9047 | -17.1797 | 295.1414 | 5.075  | 0.685492 | 19.26778 | 25.75562 | 4.389508 | 19.26778  | 295.1414 |   |
| 1Q 1992 | 5    | 199.8    | 0.40625 | 212.5902 | -12.7902 | 163.5885 | 5.075  | 0.685492 | 19.26778 | 25.75563 | 4.389508 | 19.26778  | 163.5885 |   |
| 2Q 1992 | 6    | 204.875  | 0.4375  | 213.2757 | -8.40066 | 70.57112 | 5.075  | 0.685492 | 19.26778 | 25.75562 | 4.389508 | 19.26778  | 70.57112 |   |
| 3Q 1992 | 7    | 209.95   | 0.46875 | 213.9612 | -4.01115 | 16.08935 | 5.075  | 0.685492 | 19.26778 | 25.75562 | 4.389508 | 19.26778  | 16.08935 |   |
| 4Q 1992 | 8    | 215.025  | 0.5     | 214.6466 | 0.378355 | 0.143153 | 5.075  | 0.685492 | 19.26778 | 25.75563 | 4.389508 | 19.26778  | 0.143153 |   |
| 1Q 1993 | 9    | 220.1    | 0.625   | 217.3886 | 2.711389 | 7.351629 | 5.075  | 2.741966 | 5.443046 | 25.75562 | 2.333034 | 5.443046  | 7.351629 |   |
| 2Q 1993 | 10   | 225.175  | 0.75    | 220.1306 | 5.044423 | 25.4462  | 5.075  | 2.741966 | 5.443046 | 25.75563 | 2.333034 | 5.443046  | 25.4462  |   |
| 3Q 1993 | 11   | 230.25   | 0.875   | 222.8725 | 7.377456 | 54.42686 | 5.075  | 2.741966 | 5.443046 | 25.75562 | 2.333034 | 5.443046  | 54.42686 |   |
| 4Q 1993 | 12   | 235.325  | 1       | 225.6145 | 9.71049  | 94.29362 | 5.075  | 2.741966 | 5.443046 | 25.75562 | 2.333034 | 5.443046  | 94.29362 |   |
| 1Q 1994 | 13   | 240.4    | 1.1875  | 229.7275 | 10.67254 | 113.9031 | 5.075  | 4.112949 | 0.925541 | 25.75563 | 0.962051 | 0.925541  | 113.9031 |   |
| 2Q 1994 | 14   | 245.475  | 1.375   | 233.8404 | 11.63459 | 135.3637 | 5.075  | 4.112949 | 0.925541 | 25.75562 | 0.962051 | 0.925541  | 135.3637 |   |
| 3Q 1994 | 15   | 250.55   | 1.5625  | 237.9534 | 12.59664 | 158.6754 | 5.075  | 4.112949 | 0.925541 | 25.75563 | 0.962051 | 0.925541  | 158.6754 |   |
| 4Q 1994 | 16   | 255.625  | 1.75    | 242.0663 | 13.55869 | 183.8381 | 5.075  | 4.112949 | 0.925541 | 25.75562 | 0.962051 | 0.925541  | 183.8381 |   |
| 1Q 1995 | 17   | 260.7    | 1.9375  | 246.1793 | 14.52074 | 210.852  | 5.075  | 4.112949 | 0.925541 | 25.75562 | 0.962051 | 0.925541  | 210.852  |   |
| 2Q 1995 | 18   | 265.77   | 2.125   | 250.2922 | 15.47779 | 239.5621 | 5.07   | 4.112949 | 0.915946 | 25.7049  | 0.957051 | 0.915946  | 239.5621 |   |
| 3Q 1995 | 19   | 270.85   | 2.3125  | 254.4052 | 16.44484 | 270.4329 | 5.08   | 4.112949 | 0.935187 | 25.8064  | 0.967051 | 0.935187  | 270.4329 |   |
| 4Q 1995 | 20   | 275.925  | 2.5     | 258.5181 | 17.4069  | 303      | 5.075  | 4.112949 | 0.925541 | 25.75562 | 0.962051 | 0.925541  | 303      |   |
| 1Q 1996 | 21   | 281      | 2.8125  | 265.373  | 15.62698 | 244.2025 | 5.075  | 6.854916 | 3.1681   | 25.75562 | -1.77992 | 3.1681    | 244.2025 |   |
| 2Q 1996 | 22   | 283.0418 | 3.125   | 272.2279 | 10.81386 | 116.9396 | 2.0418 | 6.854916 | 23.16608 | 4.168947 | -4.81312 | 23.16608  | 116.9396 |   |
| 3Q 1996 | 23   | 286.0852 | 3.4375  | 279.0829 | 7.002348 | 49.03288 | 3.0434 | 6.854916 | 14.52765 | 9.262284 | -3.81152 | 14.52765  | 49.03288 |   |
| 4Q 1996 | 24   | 289.1286 | 3.75    | 285.9378 | 3.190833 | 10.18141 | 3.0434 | 6.854916 | 14.52765 | 9.262284 | -3.81152 | 14.52765  | 10.18141 |   |
| 1Q 1997 | 25   | 292.172  | 3.90625 | 289.3652 | 2.806775 | 7.877984 | 3.0434 | 3.427458 | 0.1475   | 9.262284 | -0.38406 | 0.1475    | 7.877984 |   |
| 2Q 1997 | 26   | 295.2154 | 4.0625  | 292.7927 | 2.422717 | 5.869557 | 3.0434 | 3.427458 | 0.1475   | 9.262284 | -0.38406 | 0.1475    | 5.869557 |   |
| 3Q 1997 | 27   | 298.2588 | 4.21875 | 296.2201 | 2.038659 | 4.156131 | 3.0434 | 3.427458 | 0.1475   | 9.262284 | -0.38406 | 0.1475    | 4.156131 |   |
| 4Q 1997 | 28   | 301.3022 | 4.375   | 299.6476 | 1.654601 | 2.737705 | 3.0434 | 3.427458 | 0.1475   | 9.262284 | -0.38406 | 0.1475    | 2.737705 |   |
| 1Q 1998 | 29   | 304.3456 | 4.70625 | 306.9138 | -2.56821 | 6.595699 | 3.0434 | 7.266211 | 17.83213 | 9.262284 | -4.22281 | 17.83213  | 6.595699 |   |
| 2Q 1998 | 30   | 307.389  | 5.0375  | 314.18   | -6.79102 | 46.11795 | 3.0434 | 7.266211 | 17.83213 | 9.262284 | -4.22281 | 17.83213  | 46.11795 |   |
| 3Q 1998 | 31   | 310.4324 | 5.36875 | 321.4462 | -11.0138 | 121.3045 | 3.0434 | 7.266211 | 17.83213 | 9.262284 | -4.22281 | 17.83213  | 121.3045 |   |
| 4Q 1998 | 32   | 313.4758 | 5.7     | 328.7124 | -15.2366 | 232.1552 | 3.0434 | 7.266211 | 17.83213 | 9.262284 | -4.22281 | 17.83213  | 232.1552 |   |
| 1Q 1999 | 33   | 316.5192 | 5.675   | 328.164  | -11.6448 | 135.6025 | 3.0434 | -0.54839 | 12.90098 | 9.262284 | 3.591793 | 12.90098  | 135.6025 |   |
| 2Q 1999 | 34   | 319.5626 | 5.65    | 327.6157 | -8.05305 | 64.85169 | 3.0434 | -0.54839 | 12.90098 | 9.262284 | 3.591793 | 12.90098  | 64.85169 |   |
| 3Q 1999 | 35   | 322.606  | 5.625   | 327.0673 | -4.46126 | 19.90285 | 3.0434 | -0.54839 | 12.90098 | 9.262284 | 3.591793 | 12.90098  | 19.90285 |   |
| 4Q 1999 | 36   | 325.6494 | 5.6     | 326.5189 | -0.86947 | 0.755975 | 3.0434 | -0.54839 | 12.90098 | 9.262284 | 3.591793 | 12.90098  | 0.755975 |   |
| 1Q 2000 | 37   | 328.6928 | 5.73125 | 329.3979 | -0.70513 | 0.497212 | 3.0434 | 2.879065 | 0.027006 | 9.262284 | 0.164335 | 0.027006  | 0.497212 |   |
| 2Q 2000 | 38   | 331.7362 | 5.8625  | 332.277  | -0.5408  | 0.292462 | 3.0434 | 2.879065 | 0.027006 | 9.262284 | 0.164335 | 0.027006  | 0.292462 |   |
| 3Q 2000 | 39   | 334.7796 | 5.99375 | 335.1561 | -0.37646 | 0.141723 | 3.0434 | 2.879065 | 0.027006 | 9.262284 | 0.164335 | 0.027006  | 0.141723 |   |
| 4Q 2000 | 40   | 337.823  | 6.125   | 338.0351 | -0.21213 | 0.044998 | 3.0434 | 2.879065 | 0.027006 | 9.262284 | 0.164335 | 0.027006  | 0.044998 |   |
|         |      |          |         |          |          | 4551.023 |        | 158.323  | 128.1869 | 343.071  | 686.0026 | 0.212126  | 0.044998 | 0 |
|         |      |          |         |          |          |          |        | 8.576775 | 17.15007 | 0.005439 | 343.116  | 4551.023  |          | 0 |

Theil's Coef. **0.500102** **0.707179** **OK**

According to the Theil's inequality coefficient, this test has good forecasting abilities.


## HIV/AIDS and Competition

| Series | Price    | AIDS    | Competition | Forecast | e        | e^2             | A. Ch. | P. Ch           | (P-A)^2         | A^2      | (e2-e1)         | (e2-e1)^2       | e^2             |                 |           |
|--------|----------|---------|-------------|----------|----------|-----------------|--------|-----------------|-----------------|----------|-----------------|-----------------|-----------------|-----------------|-----------|
| 1Q1991 | 179.5    | 0.28125 | 1           | 203.7472 | -24.2472 | 587.9247        |        |                 |                 |          |                 |                 |                 |                 |           |
| 2Q1991 | 184.575  | 0.3125  | 1           | 204.6509 | -20.0759 | 403.0429        | 5.075  | 0.903769        | 17.39917        | 25.75562 | 4.171231        | 17.39917        | 403.0429        |                 |           |
| 3Q1991 | 189.65   | 0.34375 | 1           | 205.5547 | -15.9047 | 252.9594        | 5.075  | 0.903769        | 17.39917        | 25.75563 | 4.171231        | 17.39917        | 252.9594        |                 |           |
| 4Q1991 | 194.725  | 0.375   | 1           | 206.4585 | -11.7335 | 137.6742        | 5.075  | 0.903769        | 17.39917        | 25.75562 | 4.171231        | 17.39917        | 137.6742        |                 |           |
| 1Q1992 | 199.8    | 0.40625 | 1           | 207.3622 | -7.56224 | 57.18741        | 5.075  | 0.903769        | 17.39917        | 25.75563 | 4.171231        | 17.39917        | 57.18741        |                 |           |
| 2Q1992 | 204.875  | 0.4375  | 1           | 208.266  | -3.391   | 11.49891        | 5.075  | 0.903769        | 17.39917        | 25.75562 | 4.171231        | 17.39917        | 11.49891        |                 |           |
| 3Q1992 | 209.95   | 0.46875 | 1           | 209.1698 | 0.780226 | 0.608753        | 5.075  | 0.903769        | 17.39917        | 25.75562 | 4.171231        | 17.39917        | 0.608753        |                 |           |
| 4Q1992 | 215.025  | 0.5     | 1           | 210.0735 | 4.951457 | 24.51693        | 5.075  | 0.903769        | 17.39917        | 25.75563 | 4.171231        | 17.39917        | 24.51693        |                 |           |
| 1Q1993 | 220.1    | 0.625   | 1           | 213.6886 | 6.411381 | 41.1058         | 5.075  | 3.615076        | 2.131377        | 25.75562 | 1.459924        | 2.131377        | 41.1058         |                 |           |
| 2Q1993 | 225.175  | 0.75    | 1           | 217.3037 | 7.871305 | 61.95743        | 5.075  | 3.615076        | 2.131377        | 25.75563 | 1.459924        | 2.131377        | 61.95743        |                 |           |
| 3Q1993 | 230.25   | 0.875   | 1           | 220.9188 | 9.331228 | 87.07182        | 5.075  | 3.615076        | 2.131377        | 25.75562 | 1.459924        | 2.131377        | 87.07182        |                 |           |
| 4Q1993 | 235.325  | 1       | 1           | 224.5338 | 10.79115 | 116.449         | 5.075  | 3.615076        | 2.131377        | 25.75562 | 1.459924        | 2.131377        | 116.449         |                 |           |
| 1Q1994 | 240.4    | 1.1875  | 1           | 229.9565 | 10.44354 | 109.0675        | 5.075  | 5.422614        | 0.120836        | 25.75563 | -0.34761        | 0.120836        | 109.0675        |                 |           |
| 2Q1994 | 245.475  | 1.375   | 1           | 235.3791 | 10.09592 | 101.9277        | 5.075  | 5.422614        | 0.120836        | 25.75562 | -0.34761        | 0.120836        | 101.9277        |                 |           |
| 3Q1994 | 250.55   | 1.5625  | 1           | 240.8017 | 9.748309 | 95.02953        | 5.075  | 5.422614        | 0.120836        | 25.75563 | -0.34761        | 0.120836        | 95.02953        |                 |           |
| 4Q1994 | 255.625  | 1.75    | 1           | 246.2243 | 9.400695 | 88.37306        | 5.075  | 5.422614        | 0.120836        | 25.75562 | -0.34761        | 0.120836        | 88.37306        |                 |           |
| 1Q1995 | 260.7    | 1.9375  | 1           | 251.6469 | 9.05308  | 81.95826        | 5.075  | 5.422614        | 0.120836        | 25.75562 | -0.34761        | 0.120836        | 81.95826        |                 |           |
| 2Q1995 | 265.77   | 2.125   | 1           | 257.0695 | 8.700466 | 75.6981         | 5.07   | 5.422614        | 0.124337        | 25.7049  | -0.35261        | 0.124337        | 75.6981         |                 |           |
| 3Q1995 | 270.85   | 2.3125  | 1           | 262.4921 | 8.357851 | 69.85368        | 5.08   | 5.422614        | 0.117385        | 25.8064  | -0.34261        | 0.117385        | 69.85368        |                 |           |
| 4Q1995 | 275.925  | 2.5     | 1           | 267.9148 | 8.010237 | 64.1639         | 5.075  | 5.422614        | 0.120836        | 25.75562 | -0.34761        | 0.120836        | 64.1639         |                 |           |
| 1Q1996 | 281      | 2.8125  | 1.25        | 274.5694 | 6.430637 | 41.35309        | 5.075  | 6.6546          | 2.495137        | 25.75562 | -1.5796         | 2.495137        | 41.35309        |                 |           |
| 2Q1996 | 283.0418 | 3.125   | 1.5         | 281.224  | 1.817837 | 3.30453         | 2.0418 | 6.6546          | 21.27792        | 4.168947 | -4.6128         | 21.27792        | 3.30453         |                 |           |
| 3Q1996 | 286.0852 | 3.4375  | 1.75        | 287.8786 | -1.79336 | 3.216152        | 3.0434 | 6.6546          | 13.04077        | 9.262284 | -3.6112         | 13.04077        | 3.216152        |                 |           |
| 4Q1996 | 289.1286 | 3.75    | 2           | 294.5332 | -5.40456 | 29.20931        | 3.0434 | 6.6546          | 13.04077        | 9.262284 | -3.6112         | 13.04077        | 29.20931        |                 |           |
| 1Q1997 | 292.172  | 3.90625 | 2.25        | 296.6689 | -4.49692 | 20.22227        | 3.0434 | 2.135755        | 0.82382         | 9.262284 | 0.907645        | 0.82382         | 20.22227        |                 |           |
| 2Q1997 | 295.2154 | 4.0625  | 2.5         | 298.8047 | -3.58927 | 12.88288        | 3.0434 | 2.135755        | 0.82382         | 9.262284 | 0.907645        | 0.82382         | 12.88288        |                 |           |
| 3Q1997 | 298.2588 | 4.21875 | 2.75        | 300.9404 | -2.68163 | 7.191128        | 3.0434 | 2.135755        | 0.82382         | 9.262284 | 0.907645        | 0.82382         | 7.191128        |                 |           |
| 4Q1997 | 301.3022 | 4.375   | 3           | 303.0762 | -1.77398 | 3.147015        | 3.0434 | 2.135755        | 0.82382         | 9.262284 | 0.907645        | 0.82382         | 3.147015        |                 |           |
| 1Q1998 | 304.3456 | 4.70625 | 3.25        | 310.273  | -5.92744 | 35.1346         | 3.0434 | 7.196862        | 17.25124        | 9.262284 | -4.15346        | 17.25124        | 35.1346         |                 |           |
| 2Q1998 | 307.389  | 5.0375  | 3.5         | 317.4699 | -10.0809 | 101.6247        | 3.0434 | 7.196862        | 17.25124        | 9.262284 | -4.15346        | 17.25124        | 101.6247        |                 |           |
| 3Q1998 | 310.4324 | 5.36875 | 3.75        | 324.6668 | -14.2344 | 202.6172        | 3.0434 | 7.196862        | 17.25124        | 9.262284 | -4.15346        | 17.25124        | 202.6172        |                 |           |
| 4Q1998 | 313.4758 | 5.7     | 4           | 331.8636 | -18.3878 | 338.1123        | 3.0434 | 7.196862        | 17.25124        | 9.262284 | -4.15346        | 17.25124        | 338.1123        |                 |           |
| 1Q1999 | 316.5192 | 5.675   | 4.25        | 328.7575 | -12.2383 | 149.7766        | 3.0434 | -3.10611        | 37.81642        | 9.262284 | 6.149506        | 37.81642        | 149.7766        |                 |           |
| 2Q1999 | 319.5626 | 5.65    | 4.5         | 325.6514 | -6.08882 | 37.0737         | 3.0434 | -3.10611        | 37.81642        | 9.262284 | 6.149506        | 37.81642        | 37.0737         |                 |           |
| 3Q1999 | 322.606  | 5.625   | 4.75        | 322.5453 | 0.060688 | 0.003683        | 3.0434 | -3.10611        | 37.81642        | 9.262284 | 6.149506        | 37.81642        | 0.003683        |                 |           |
| 4Q1999 | 325.6494 | 5.6     | 5           | 319.4392 | 6.210194 | 38.56651        | 3.0434 | -3.10611        | 37.81642        | 9.262284 | 6.149506        | 37.81642        | 38.56651        |                 |           |
| 1Q2000 | 328.6928 | 5.73125 | 5.25        | 320.8519 | 7.840854 | 61.479          | 3.0434 | 1.41274         | 2.659053        | 9.262284 | 1.63066         | 2.659053        | 61.479          |                 |           |
| 2Q2000 | 331.7362 | 5.8625  | 5.5         | 322.2647 | 9.471515 | 89.70959        | 3.0434 | 1.41274         | 2.659053        | 9.262284 | 1.63066         | 2.659053        | 89.70959        |                 |           |
| 3Q2000 | 334.7796 | 5.99375 | 5.75        | 323.6774 | 11.10218 | 123.2583        | 3.0434 | 1.41274         | 2.659053        | 9.262284 | 1.63066         | 2.659053        | 123.2583        |                 |           |
| 4Q2000 | 337.823  | 6.125   | 6           | 325.0902 | 12.73284 | 162.1251        | 3.0434 | 1.41274         | 2.659053        | 9.262284 | 1.63066         | 2.659053        | 162.1251        |                 |           |
|        |          |         |             |          |          | <b>3340.152</b> |        |                 | 158.323         | 121.343  | 415.3432        | 686.0026        | -12.7328        | 162.1251        | 0         |
|        |          |         |             |          |          |                 |        | <b>10.38358</b> | <b>17.15007</b> |          | <b>-0.32648</b> | <b>577.4683</b> | <b>3340.152</b> | 0               |           |
|        |          |         |             |          |          |                 |        |                 |                 |          |                 |                 |                 | 0.605454        |           |
|        |          |         |             |          |          |                 |        |                 |                 |          |                 |                 |                 | <b>0.778109</b> | <b>OK</b> |

According to the Theils inequality coefficient, this test has good forecasting abilities.

## Goldfeld-Quandt Test for Heteroscedasticity

| Series  | Price     | AIDS    | Price     | Competition |
|---------|-----------|---------|-----------|-------------|
| Unit    | Estimated |         | Estimated |             |
| Quarter |           |         |           |             |
| 1Q1991  | 179.5     | 0.28125 | 179.5     | 0           |
| 2Q1991  | 184.575   | 0.3125  | 184.575   | 1           |
| 3Q1991  | 189.65    | 0.34375 | 189.65    | 1           |
| 4Q1991  | 194.725   | 0.375   | 194.725   | 1           |
| 1Q1992  | 199.8     | 0.40625 | 199.8     | 1           |
| 2Q1992  | 204.875   | 0.4375  | 204.875   | 1           |
| 3Q1992  | 209.95    | 0.46875 | 209.95    | 1           |
| 4Q1992  | 215.025   | 0.5     | 215.025   | 1           |
| 1Q1993  | 220.1     | 0.625   | 220.1     | 1           |
| 2Q1993  | 225.175   | 0.75    | 225.175   | 1           |
| 3Q1993  | 230.25    | 0.875   | 230.25    | 1           |
| 4Q1993  | 235.325   | 1       | 235.325   | 1           |
| 1Q1994  | 240.4     | 1.1875  | 240.4     | 1           |
| 2Q1994  | 245.475   | 1.375   | 245.475   | 1           |
| 3Q1994  | 250.55    | 1.5625  | 250.55    | 1           |
| 4Q1994  |           |         |           |             |
| 1Q1995  |           |         |           |             |
| 2Q1995  |           |         |           |             |
| 3Q1995  |           |         |           |             |
| 4Q1995  |           |         |           |             |
| 1Q1996  |           |         |           |             |
| 2Q1996  |           |         |           |             |
| 3Q1996  |           |         |           |             |
| 4Q1996  |           |         |           |             |
| 1Q1997  |           |         |           |             |
| 2Q1997  | 295.2154  | 4.0625  | 295.2154  | 3           |
| 3Q1997  | 298.2588  | 4.21875 | 298.2588  | 3.25        |
| 4Q1997  | 301.3022  | 4.375   | 301.3022  | 3.5         |
| 1Q1998  | 304.3456  | 4.70625 | 304.3456  | 3.75        |
| 2Q1998  | 307.389   | 5.0375  | 307.389   | 4           |
| 3Q1998  | 310.4324  | 5.36875 | 310.4324  | 4.25        |
| 4Q1998  | 325.6494  | 5.6     | 313.4758  | 4.5         |
| 1Q1999  | 322.606   | 5.625   | 316.5192  | 4.75        |
| 2Q1999  | 319.5626  | 5.65    | 319.5626  | 5           |
| 3Q1999  | 316.5192  | 5.675   | 322.606   | 5.25        |
| 4Q1999  | 313.4758  | 5.7     | 325.6494  | 5.5         |
| 1Q2000  | 328.6928  | 5.73125 | 328.6928  | 5.75        |
| 2Q2000  | 331.7362  | 5.8625  | 334.7796  | 5.75        |
| 3Q2000  | 334.7796  | 5.99375 | 331.7362  | 6           |
| 4Q2000  | 337.823   | 6.125   | 337.823   | 6           |



$F = 0.44622763$   
 $Deg. F = 2.69$   
 $F < F_{Homoscedastic}$

$F =$   
 $Deg. F =$   
 $F < F$

# Goldfeld -Quandt Continued

## SUMMARY OUTPUT

| Regression Statistics |          |  |  |  |  |
|-----------------------|----------|--|--|--|--|
| Multiple R            | 0.940839 |  |  |  |  |
| R Square              | 0.885178 |  |  |  |  |
| Adjusted R S          | 0.876346 |  |  |  |  |
| Standard Err          | 7.980973 |  |  |  |  |
| Observations          | 15       |  |  |  |  |

| ANOVA      |    |          |            |             |                |
|------------|----|----------|------------|-------------|----------------|
|            | df | SS       | MS         | F           | Significance F |
| Regression | 1  | 6383.528 | 6383.52784 | 100.2187628 | 1.78E-07       |
| Residual   | 13 | 828.0472 | 63.6959354 |             |                |
| Total      | 14 | 7211.575 |            |             |                |

|              | Coefficient | Standard Err | t Stat     | P-value     | Lower 95% | Upper 95% | Lower 90% | Upper 90% |              | Coefficient | Standard Err | t Stat      | P-value  |
|--------------|-------------|--------------|------------|-------------|-----------|-----------|-----------|-----------|--------------|-------------|--------------|-------------|----------|
| Intercept    | 178.7163    | 4.171433     | 42.8428958 | 2.20921E-15 | 169.7044  | 187.7281  | 169.7     | 187.7     | Intercept    | 179.5       | 21.23025     | 8.45491765  | 1.21E-06 |
| X Variable 1 | 51.86961    | 5.181297     | 10.0109322 | 1.77657E-07 | 40.6761   | 63.06312  | 40.68     | 63.06312  | X Variable 1 | 38.0625     | 21.97539     | 1.732050808 | 0.106908 |

## SUMMARY OUTPUT

| Regression Statistics |          |  |  |  |  |
|-----------------------|----------|--|--|--|--|
| Multiple R            | 0.433013 |  |  |  |  |
| R Square              | 0.1875   |  |  |  |  |
| Adjusted R S          | 0.125    |  |  |  |  |
| Standard Err          | 21.23025 |  |  |  |  |
| Observations          | 15       |  |  |  |  |

| ANOVA      |    |          |             |   |                |
|------------|----|----------|-------------|---|----------------|
|            | df | SS       | MS          | F | Significance F |
| Regression | 1  | 1352.17  | 1352.170313 | 3 |                |
| Residual   | 13 | 5859.405 | 450.7234375 |   |                |
| Total      | 14 | 7211.575 |             |   |                |

|              | Coefficient | Standard Err | t Stat      | P-value  | Lower 95% | Upper 95% | Lower 90% | Upper 90% |              | Coefficient | Standard Err | t Stat      | P-value  |
|--------------|-------------|--------------|-------------|----------|-----------|-----------|-----------|-----------|--------------|-------------|--------------|-------------|----------|
| Intercept    | 179.5       | 21.23025     | 8.45491765  | 1.21E-06 | 169.7     | 187.7     | 169.7     | 187.7     | Intercept    | 179.5       | 21.23025     | 8.45491765  | 1.21E-06 |
| X Variable 1 | 38.0625     | 21.97539     | 1.732050808 | 0.106908 | 40.68     | 63.06312  | 40.68     | 63.06312  | X Variable 1 | 38.0625     | 21.97539     | 1.732050808 | 0.106908 |

## RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals |
|-------------|-------------|-----------|
| 1           | 193.3046    | -13.8046  |
| 2           | 194.9255    | -10.35053 |
| 3           | 196.5465    | -6.896452 |
| 4           | 198.1674    | -3.442377 |
| 5           | 199.7883    | 0.011697  |
| 6           | 201.4092    | 3.465772  |
| 7           | 203.0302    | 6.919847  |
| 8           | 204.6511    | 10.37392  |
| 9           | 211.1348    | 8.965221  |
| 10          | 217.6185    | 7.55652   |
| 11          | 224.1022    | 6.147819  |
| 12          | 230.5859    | 4.739118  |
| 13          | 240.3114    | 0.088566  |
| 14          | 250.037     | -4.561986 |
| 15          | 259.7625    | -9.212537 |

**828.04716**

## RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals |
|-------------|-------------|-----------|
| 1           | 179.5       | 5.68E-14  |
| 2           | 217.5625    | -32.9875  |
| 3           | 217.5625    | -27.9125  |
| 4           | 217.5625    | -22.8375  |
| 5           | 217.5625    | -17.7625  |
| 6           | 217.5625    | -12.6875  |
| 7           | 217.5625    | -7.6125   |
| 8           | 217.5625    | -2.5375   |
| 9           | 217.5625    | 2.5375    |
| 10          | 217.5625    | 7.6125    |
| 11          | 217.5625    | 12.6875   |
| 12          | 217.5625    | 17.7625   |
| 13          | 217.5625    | 22.8375   |
| 14          | 217.5625    | 27.9125   |
| 15          | 217.5625    | 32.9875   |

**5859.404688**

## SUMMARY OUTPUT

| Regression Statistics |          |  |  |  |  |
|-----------------------|----------|--|--|--|--|
| Multiple R            | 0.926027 |  |  |  |  |
| R Square              | 0.857526 |  |  |  |  |
| Adjusted R Sq         | 0.846567 |  |  |  |  |
| Standard Error        | 5.331312 |  |  |  |  |
| Observations          | 15       |  |  |  |  |

| ANOVA      |    |          |            |             |                |
|------------|----|----------|------------|-------------|----------------|
|            | df | SS       | MS         | F           | Significance F |
| Regression | 1  | 2223.942 | 2223.94188 | 78.24475871 | 7.32E-07       |
| Residual   | 13 | 369.4975 | 28.4228862 |             |                |
| Total      | 14 | 2593.439 |            |             |                |

|              | Coefficient | Standard Err | t Stat     | P-value     | Lower 95% | Upper 95% | Lower 90% | Upper 90% |              | Coefficient | Standard Err | t Stat      | P-value  |
|--------------|-------------|--------------|------------|-------------|-----------|-----------|-----------|-----------|--------------|-------------|--------------|-------------|----------|
| Intercept    | 216.3464    | 11.40794     | 18.9645456 | 7.42059E-11 | 191.701   | 240.9917  | 191.7     | 240.9917  | Intercept    | 254.8791    | 2.447042     | 104.1580498 | 2.21E-20 |
| X Variable 1 | 18.84571    | 2.130517     | 8.84560675 | 7.32118E-07 | 14.24301  | 23.44841  | 14.24     | 23.44841  | X Variable 1 | 13.16158    | 0.511217     | 25.74559412 | 1.54E-12 |

## SUMMARY OUTPUT

| Regression Statistics |          |  |  |  |  |
|-----------------------|----------|--|--|--|--|
| Multiple R            | 0.990336 |  |  |  |  |
| R Square              | 0.980765 |  |  |  |  |
| Adjusted R Sq         | 0.979285 |  |  |  |  |
| Standard Error        | 1.958924 |  |  |  |  |
| Observations          | 15       |  |  |  |  |

| ANOVA      |    |          |             |          |                |
|------------|----|----------|-------------|----------|----------------|
|            | df | SS       | MS          | F        | Significance F |
| Regression | 1  | 2543.553 | 2543.553431 | 662.8356 |                |
| Residual   | 13 | 49.88597 | 3.837381952 |          |                |
| Total      | 14 | 2593.439 |             |          |                |

|              | Coefficient | Standard Err | t Stat      | P-value  | Lower 95% | Upper 95% | Lower 90% | Upper 90% |              | Coefficient | Standard Err | t Stat      | P-value  |
|--------------|-------------|--------------|-------------|----------|-----------|-----------|-----------|-----------|--------------|-------------|--------------|-------------|----------|
| Intercept    | 254.8791    | 2.447042     | 104.1580498 | 2.21E-20 | 240.9917  | 268.7665  | 240.9917  | 268.7665  | Intercept    | 254.8791    | 2.447042     | 104.1580498 | 2.21E-20 |
| X Variable 1 | 13.16158    | 0.511217     | 25.74559412 | 1.54E-12 | 11.9957   | 14.32749  | 11.9957   | 14.32749  | X Variable 1 | 13.16158    | 0.511217     | 25.74559412 | 1.54E-12 |

## RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals |
|-------------|-------------|-----------|
| 1           | 292.9071    | 2.308309  |
| 2           | 295.8517    | 2.407066  |
| 3           | 298.7964    | 2.505823  |
| 4           | 305.039     | -0.693419 |
| 5           | 311.2817    | -3.892662 |
| 6           | 317.5243    | -7.091905 |
| 7           | 321.8824    | 3.767024  |
| 8           | 322.3535    | 0.252481  |
| 9           | 322.8247    | -3.262062 |
| 10          | 323.2958    | -6.776605 |
| 11          | 323.7669    | -10.29115 |
| 12          | 324.3559    | 4.336924  |
| 13          | 326.8294    | 4.906824  |
| 14          | 329.3029    | 5.476724  |
| 15          | 331.7764    | 6.046624  |

**369.497521**

## RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals   |
|-------------|-------------|-------------|
| 1           | 294.3639    | 0.85153     |
| 2           | 297.6543    | 0.365462106 |
| 3           | 300.9447    | 0.357539    |
| 4           | 304.2351    | 0.110543    |
| 5           | 307.5255    | -0.136452   |
| 6           | 310.8158    | -0.383448   |
| 7           | 314.1062    | -0.630443   |
| 8           | 317.3966    | -0.877439   |
| 9           | 320.687     | -1.124434   |
| 10          | 323.9774    | -1.37143    |
| 11          | 327.2678    | -1.618426   |
| 12          | 330.5582    | -1.865421   |
| 13          | 333.8486    | -2.112417   |
| 14          | 337.139     | -2.359412   |
| 15          | 340.4294    | -2.606408   |

**49.88596537**

SUMMARY OUTPUT

| <u>Regression Statistics</u> |          |
|------------------------------|----------|
| Multiple R                   | 0.968857 |
| R Square                     | 0.938684 |
| Adjusted R                   | 0.93707  |
| Standard E                   | 12.00004 |
| Observatio                   | 40       |

| ANOVA      |    |          |          |           |                |
|------------|----|----------|----------|-----------|----------------|
|            | df | SS       | MS       | F         | Significance F |
| Regression | 1  | 83770.77 | 83770.77 | 581.73787 | 1.22E-24       |
| Residual   | 38 | 5472.034 | 144.0009 |           |                |
| Total      | 39 | 89242.8  |          |           |                |

|            | Coefficients | Standard Error | t Stat   | P-value    | Lower 95% | Upper 95% | Lower 95.0% |
|------------|--------------|----------------|----------|------------|-----------|-----------|-------------|
| Intercept  | 203.6878     | 3.283969       | 62.02489 | 8.4819E-40 | 197.0398  | 210.3359  | 197.0398    |
| X Variable | 21.93573     | 0.90947        | 24.11924 | 1.2194E-24 | 20.0946   | 23.77685  | 20.0946     |

RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals | e^2      | (e/(e-1))^2 |
|-------------|-------------|-----------|----------|-------------|
| 1           | 209.8572    | -30.3572  | 921.5619 |             |
| 2           | 210.5427    | -25.9677  | 674.323  | 19.2677852  |
| 3           | 211.2282    | -21.5782  | 465.6196 | 19.2677852  |
| 4           | 211.9137    | -17.1887  | 295.4518 | 19.2677852  |
| 5           | 212.5992    | -12.7992  | 163.8196 | 19.2677852  |
| 6           | 213.2847    | -8.4097   | 70.72298 | 19.2677852  |
| 7           | 213.9702    | -4.02019  | 16.1619  | 19.2677852  |
| 8           | 214.6557    | 0.369322  | 0.136398 | 19.2677852  |
| 9           | 217.3976    | 2.702356  | 7.302727 | 5.44304829  |
| 10          | 220.1396    | 5.03539   | 25.35515 | 5.44304829  |
| 11          | 222.8816    | 7.368424  | 54.29367 | 5.44304829  |
| 12          | 225.6235    | 9.701458  | 94.11829 | 5.44304829  |
| 13          | 229.7365    | 10.66351  | 113.7104 | 0.92554253  |
| 14          | 233.8494    | 11.62556  | 135.1537 | 0.92554253  |
| 15          | 237.9624    | 12.58761  | 158.448  | 0.92554253  |
| 16          | 242.0753    | 13.54966  | 183.5934 | 0.92554253  |
| 17          | 246.1883    | 14.51171  | 210.5899 | 0.92554253  |
| 18          | 250.3012    | 15.46877  | 239.2827 | 0.91594702  |
| 19          | 254.4142    | 16.43582  | 270.1361 | 0.93518804  |
| 20          | 258.5271    | 17.39787  | 302.6858 | 0.92554253  |
| 21          | 265.382     | 15.61795  | 243.9205 | 3.16809617  |
| 22          | 272.237     | 10.80484  | 116.7445 | 23.1660727  |
| 23          | 279.0919    | 6.993324  | 48.90658 | 14.5276439  |
| 24          | 285.9468    | 3.181809  | 10.12391 | 14.5276439  |
| 25          | 289.3742    | 2.797752  | 7.827416 | 0.14750003  |
| 26          | 292.8017    | 2.413695  | 5.825922 | 0.14750003  |
| 27          | 296.2292    | 2.029637  | 4.119427 | 0.14750003  |
| 28          | 299.6566    | 1.64558   | 2.707933 | 0.14750003  |
| 29          | 306.9228    | -2.57723  | 6.642112 | 17.8321203  |
| 30          | 314.189     | -6.80004  | 46.24053 | 17.8321203  |
| 31          | 321.4552    | -11.0228  | 121.5032 | 17.8321203  |
| 32          | 328.7215    | -15.2457  | 232.4301 | 17.8321203  |
| 33          | 328.1731    | -11.6539  | 135.8126 | 12.9009782  |
| 34          | 327.6247    | -8.06207  | 64.997   | 12.9009782  |
| 35          | 327.0763    | -4.47028  | 19.98339 | 12.9009782  |
| 36          | 326.5279    | -0.87849  | 0.771737 | 12.9009782  |
| 37          | 329.4069    | -0.71415  | 0.51001  | 0.02700627  |
| 38          | 332.286     | -0.54981  | 0.302295 | 0.02700627  |
| 39          | 335.1651    | -0.38548  | 0.148593 | 0.02700627  |
| 40          | 338.0441    | -0.22114  | 0.048904 | 0.02700627  |
|             |             |           | 5472.034 | 343.070956  |

DW = 0.06269533 **Positive Autocorrelation**

AIC 3424.501

SIC 237.9018

SUMMARY OUTPUT

| <u>Regression Statistics</u> |          |
|------------------------------|----------|
| Multiple R                   | 0.977745 |
| R Square                     | 0.955984 |
| Adjusted R                   | 0.953605 |
| Standard Error               | 10.3036  |
| Observations                 | 40       |

| <u>ANOVA</u> |           |           |           |            |                       |
|--------------|-----------|-----------|-----------|------------|-----------------------|
|              | <u>df</u> | <u>SS</u> | <u>MS</u> | <u>F</u>   | <u>Significance F</u> |
| Regression   | 2         | 85314.72  | 42657.36  | 401.805407 | 8.07E-26              |
| Residual     | 37        | 3928.077  | 106.1642  |            |                       |
| Total        | 39        | 89242.8   |           |            |                       |

|            | <u>Coefficients</u> | <u>Standard Error</u> | <u>t Stat</u> | <u>P-value</u> | <u>Lower 95%</u> | <u>Upper 95%</u> | <u>Lower 95.0%</u> | <u>Upper 95.0%</u> |
|------------|---------------------|-----------------------|---------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept  | 205.1456            | 2.845512              | 72.09445      | 2.1318E-41     | 199.3801         | 210.9112         | 199.3801           | 210.9112           |
| X Variable | 28.92061            | 1.99112               | 14.52479      | 7.3017E-17     | 24.88622         | 32.955           | 24.88622           | 32.955             |
| X Variable | -9.53236            | 2.499609              | -3.81354      | 0.00050274     | -14.597          | -4.46768         | -14.597            | -4.46768           |

RESIDUAL OUTPUT

| <u>Observation</u> | <u>Predicted Y</u> | <u>Residuals</u> | <u>e^2</u> | <u>(et-et-1)^2</u> |
|--------------------|--------------------|------------------|------------|--------------------|
| 1                  | 203.7472           | -24.2472         | 587.927    |                    |
| 2                  | 204.651            | -20.076          | 403.0447   | 17.3991679         |
| 3                  | 205.5547           | -15.9047         | 252.9609   | 17.3991679         |
| 4                  | 206.4585           | -11.7335         | 137.6753   | 17.3991679         |
| 5                  | 207.3623           | -7.56228         | 57.1881    | 17.3991679         |
| 6                  | 208.2661           | -3.39105         | 11.49922   | 17.3991679         |
| 7                  | 209.1698           | 0.780181         | 0.608682   | 17.3991679         |
| 8                  | 210.0736           | 4.951412         | 24.51648   | 17.3991679         |
| 9                  | 213.6887           | 6.411336         | 41.10522   | 2.13137785         |
| 10                 | 217.3037           | 7.87126          | 61.95673   | 2.13137785         |
| 11                 | 220.9188           | 9.331183         | 87.07098   | 2.13137785         |
| 12                 | 224.5339           | 10.79111         | 116.448    | 2.13137785         |
| 13                 | 229.9565           | 10.44349         | 109.0666   | 0.12083558         |
| 14                 | 235.3791           | 10.09588         | 101.9268   | 0.12083558         |
| 15                 | 240.8017           | 9.748265         | 95.02867   | 0.12083558         |
| 16                 | 246.2243           | 9.400651         | 88.37224   | 0.12083558         |
| 17                 | 251.647            | 9.053037         | 81.95747   | 0.12083558         |
| 18                 | 257.0696           | 8.700423         | 75.69735   | 0.12433672         |
| 19                 | 262.4922           | 8.357809         | 69.85296   | 0.11738444         |
| 20                 | 267.9148           | 8.010194         | 64.16321   | 0.12083558         |
| 21                 | 274.5694           | 6.430595         | 41.35255   | 2.49513514         |
| 22                 | 281.224            | 1.817795         | 3.304379   | 21.2779209         |
| 23                 | 287.8786           | -1.7934          | 3.2163     | 13.0407631         |
| 24                 | 294.5332           | -5.4046          | 29.20975   | 13.0407631         |
| 25                 | 296.669            | -4.49696         | 20.22264   | 0.82382022         |
| 26                 | 298.8047           | -3.58931         | 12.88317   | 0.82382022         |
| 27                 | 300.9405           | -2.68167         | 7.191343   | 0.82382022         |
| 28                 | 303.0762           | -1.77402         | 3.147156   | 0.82382022         |
| 29                 | 310.2731           | -5.92748         | 35.13506   | 17.251239          |
| 30                 | 317.4699           | -10.0809         | 101.6254   | 17.251239          |
| 31                 | 324.6668           | -14.2344         | 202.6183   | 17.251239          |
| 32                 | 331.8637           | -18.3879         | 338.1137   | 17.251239          |
| 33                 | 328.7576           | -12.2384         | 149.7775   | 37.8164209         |
| 34                 | 325.6515           | -6.08886         | 37.07416   | 37.8164209         |
| 35                 | 322.5453           | 0.06065          | 0.003678   | 37.8164209         |
| 36                 | 319.4392           | 6.210156         | 38.56604   | 37.8164209         |
| 37                 | 320.852            | 7.840817         | 61.47841   | 2.65905413         |
| 38                 | 322.2647           | 9.471477         | 89.70888   | 2.65905413         |
| 39                 | 323.6775           | 11.10214         | 123.2575   | 2.65905413         |
| 40                 | 325.0902           | 12.7328          | 162.1242   | 2.65905413         |
|                    |                    |                  | 3928.077   | 415.34314          |

DW = 0.10573703  
**Positive Autocorrelation**  
 AIC 2458.26417  
 SIC 170.776831

## Frisch's Congruence Analysis

|          | Column 1    | Column 2    | Column 3 |
|----------|-------------|-------------|----------|
| Column 1 | 1           |             |          |
| Column 2 | 0.99216697  | 1           |          |
| Column 3 | 0.857987374 | 0.913015839 | 1        |

| Function   | SGN     | T.TEST       | R <sup>2</sup> | DW     | Test      |
|------------|---------|--------------|----------------|--------|-----------|
| Y=F(X1)    | POS     | 24.1192      | 0.0939         | 0.06   | OK        |
| Y=F(X1,X2) | POS/NEG | 14.525,-3.81 | 0.955          | 0.105  | OK        |
|            | OK/OK   | OK/OK        | Better         | Better | <b>OK</b> |
|            |         |              |                |        |           |

### Result:

Economic a priori is OK, T-Test OK, Overall R<sup>2</sup> has improved.

This model is Usefull!

Multicolliniarity has no negative impact.





## **Additional Notes:**

