

**A STUDY OF THE PREPAREDNESS FOR A CHANGING  
EMPLOYMENT ENVIRONMENT**

by

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DECLARATION

I declare that this study: “A study of the preparedness for a changing employment environment”, is my own work and that all sources which I have used or quoted have been indicated and acknowledged by complete references.

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Johannes Christiaan Labuschagne  
April 2002

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SUMMARY

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The world has, according to Toffler (1984), passed through three 'waves' of socio-economic development. These waves of development were brought about by changes in the technology related to economic activity. These technological developments also changed the social complexion of society.

The first wave of change, was from a hunter-gatherer society to an agricultural society, while the second was from an agricultural to an industrialised society.

The third wave of change is the focus of this study, which deals with the transformation from an industrial society to the so-called 'third wave' or information age and society. This transformation was brought about mainly by two factors, although there were many other influences that contributed to the change. The first factor was the technological development of electronic information and communication technologies that enabled the other influences to have such a telling effect on society. The second factor was the

globalisation of the world economy, which occurred as a result of rapid technological developments, but also as a result of political changes such as the so called fall of the iron curtain after the dismantlement of the Soviet republics and subsequent economic freedom in the former Soviet Union. The Chinese economy followed the trend towards liberalisation and a more capitalistic orientation, signaled by events such as the return of Hong Kong to China from its British colonial occupancy.

Globalisation and the development of information technologies has had far reaching consequences on the world economy and society and resulted in the formation of a 'new wave' economy where companies are becoming specialised, concentrating only on core business, to enable optimum penetration of the market in a specific area. As a result of specialisation, companies are contracting out non-core functions to independent contractors and as such, employing less permanent employees. Companies can thus employ specialists in non-core functions at competitive prices. This lead to the phenomena of 'job shift' from permanent employment to contract and temporary employment.

Large segments of the world population are resisting globalisation and job shift, because of the subsequent losses in permanent employment and increased unemployment. Social protection for contract and temporary employees are not adequate compared to the protection for permanent employees.

South Africa as a developing country, is not well positioned to absorb the effects of job shift. The standard of education in the country is low and a large portion of the population is engaged in elementary occupations. People engaged in certain technology companies such as Information Technology, are more suited to job shift compared to labour intensive companies such as the South African mining and construction industry.

A survey was done to establish the preparedness of Middle Managers in a hard rock mining company and specifically whether there is a significant difference between the preparedness of employees engaged in mining related, finance, human resources, and engineering related occupations.

Results indicated that all respondents were aware of the phenomenon of job shift and it was understood that the trend would increase.

No significant difference was found between the preparedness of the various occupational categories. It was anticipated that employees engaged in the core business of the Company, namely mining, would chose to remain in permanent employment in the mining industry, but it was found that more than 50% of all respondents proposed to apply for another permanent position in the hard rock mining industry should their jobs became redundant. More than 70% proposed to remain in the same industry. This indicated that respondents were not prepared for job shift.

Although the phenomenon of job shift was known to and understood by respondents, it was perceived not to be a real threat or opportunity.

In order to have a workforce more prepared to job shift, the researcher proposes that companies need to familiarise their employees with the skills and attributes of an entrepreneur. This will benefit the Company in moving towards a 'third wave' organisation and will also lessen the negative effects of future job losses.

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## **CHAPTER 1**

### **INTRODUCTION**

The post 1994 era, which followed the change of Government and the emergence of the envisaged 'new democratic South Africa', has seen the phenomenon of 'transformation' appear as the mechanism of renewal and improvement of South African society. This renewal is generally conceived as a futuristic vision of a 'South African Renaissance'. Transformation, both as a concept and as an institutional phenomenon, was originally conceived as a political strategy in South Africa and is therefore generally driven by socio-political forces and objectives, and yet it manifests itself in essence as a matter of change.

Whereas the broader societal transformation originally appeared in public policy decisions and legislation relating to matters such as 'equality before the law', prohibition on discrimination and non-racism, as well as in social programmes relating to housing, provision of basic life amenities such as fresh water, electricity, telephony, and the equalising of educational opportunities, both the concept and the institutional phenomenon of transformation has now extended into the everyday lives of South Africans. The workplace was one of the areas of everyday life which first experienced the consequences of transformation and also where the impact was the greatest and most visible.

Transformed public policy and legislation relating to the workplace in general, and to the employment environment specifically, has had radical and far-reaching consequences for the employment environment. The prohibition on discrimination in general, supported by the prohibition on the use of certain instruments for the selection of candidates for employment and the introduction of prescriptive legislation in the form of the Employment Equity Act

has, for example, had considerable impact on the selection of candidates for vacancies and newly created jobs. The replacement of older employees with younger persons specifically from the so-called designated groups and the determination of employment ratios has manifested as causes of socio-political transformation. Programs of Affirmative Action to promote employment equity and the consequential focus on the management of diversity, contributed significantly to change in the workplace and the employment environment. The consequences of the transformation of the world of work has been further complicated by transformation based on matters such as gender equality and issues of skills development as envisaged by the relevant legislation.

It is axiomatic that the changes mentioned above has had a significant impact and has made substantial demands on both employers and employees. In many cases, this has caused considerable stress and hardship for job incumbents whose employment opportunities have been placed under threat by the various transformation initiatives.

Transformation of the South African society in all its' dimensions, did not however take place in isolation from the rest of the world. Almost coincidentally, this period of transformation in South Africa occurred at the same time as the international trend toward 'globalisation', which of course has been an integral part of the international process of the liberalisation of commerce and industry. This exposure of the South African workplace and employment environment to the international or global business related pressures, has resulted in further change or adaptation. So, for instance, the pressure on business to become or to remain internationally or globally competitive, has caused employers to re-think various social programs and to reconsider a number of employee benefits in an attempt to curtail costs.

One of the most significant reactions of employers to this workplace transformation has been the trend to accede to the international trend towards provident funds in the place of historical pension funds, or to change from fixed contribution pension funds to fixed benefit funds. This change alone has caused many employees who have relied in the past on pension funds to provide for their retirement, to reconsider their financial positions. Equally, the change of approach to medical assistance from fully financed medical aid funds to limited coverage and medical assurance, has placed the financial basis of many employees, even those at the higher levels of employment, in jeopardy.

Perhaps the most significant change to the workplace resulting from globalization and the consequential revision of organizational cost structures, has been the trend towards re-engineering of the organization to a core business focus. The overriding declared motive for re-engineering and core business focus in most organizations is efficiency, cost effectiveness and consequentially global competitiveness.

In reality however, one of the main driving forces of re-engineering has been the international alignment of business process to the evolution of technologies, more specifically communications technologies based on digitalization, signal compression and satellite transmissions, such as the introduction of sophisticated telephony and electronic data transmission. These provide the backbone for electronic business and the consequential access to and control of data basis of great magnitude.

The nett effect of this core business focus however, has been to obviate the need in many organizations for certain subservient



business activities. In many cases these so called non-core business activities i.e. service or support activities, have been 'outsourced' or contracted out to service providers, resulting in the incumbents and jobs in that business activity becoming redundant.

The fact that many of these non-core business activities were made 'redundant' in the sense that they were no longer accepted as necessary integral components of the business and were ejected from the main stream activity focus of the business, in no way suggests that these activities are no longer needed by the business, but rather that they did not warrant the investment of scarce resources in them. The nature of the change was and still is [simply] that these businesses consider it more appropriate to have these activities executed by persons or sources external to the organization, who ostensibly can provide these activities as services to the organization more cost effectively and more efficiently than the businesses themselves could.

In addition to this trend of re-engineering, the societal transformation that had spilled over into the workplace had given birth to an extensive revamp of labour legislation, which in turn had established considerable rights for labour. Trade Unions naturally capitilised on these rights and the enhanced access to, for instance, the dispute adjudication mechanisms of the Commission for Conciliation, Mediation and Arbitration. Albeit that these rights may have been long overdue, it did have the nett effect that many employers began to perceive the employment of persons as hostile and for many even unmanageable. This perception, whether justified or not, gave rise to new phenomena such as labour brokering and the employment of contract workers rather than permanent employees and substantially changed the approach to and character of the employment relationship. Again the consequence of the said dynamics has been the substantial

reduction of the workforce, the consequential loss of job opportunities and the need for many workers to either find alternative employment or alternative sources of income. Although many jobs and or activities were culled from organizations, certain services were still required and it became the trend to outsource or contract out these services.

With regard to the core business and re-engineering focus, the trend has been to terminate the employment of persons involved in these outsourced activities and to 'contract out' these activities to external sources. This 'contracting out' has taken many forms. Initially, the tendency was to set up wholly owned subsidiary organizations or business units of the primary organization, or to 'sell' these services to external, independent organizations as so-called 'going concerns' i.e. to have their employees employed by the external organization as part of a contract with the external organization rendering the service or providing the products to the primary organization. An example of this approach is the selling off of maintenance service functions, engineering departments, warehousing, and even Human Resource and Training functions to professional service provider organizations. Albeit that this approach is generally also referred to as 'outsourcing', it has also been described in the literature as 'qualitative de-jobbing' or 'structural business adjustment'.

In truth, the trend towards outsourcing soon developed from outsourcing to specialist service providers, to outsourcing to individuals as well as small and medium sized entrepreneurial businesses. This has been driven by the political imperatives of [Black] economic empowerment and the realisation that economic development can be enhanced by the promotion of the informal economic sector and entrepreneurial initiatives.

This outsourcing represents a move away from the 'do-it-yourself' approach, which perceived the organization as an 'organic whole' where the employer has a 'social responsibility' - also a moral commitment - to its' employees which extends beyond the legal or contractual duties of an employer. This latter approach emerged after the Second World War and the post war economic recession and with the rise of the Humanism philosophy. This approach has now been eclipsed by the economic realities of global competitiveness and cost effectiveness demands of the global village. Many of the business activities mentioned above, relate specifically to this change of focus from organic whole and social responsibility to cost effective core business focus, leading to the outsourcing of house keeping functions, cafeterias, crèche's, social clubs, gymnasiums, supply shops for employees where they enjoyed the benefits of corporate buying power, etc.

The reality is, of course, that many of these secondary or service functions in the organizations are at a higher level of competence and productivity, causing many of the outsourced ex-employees to be unsuitable due to their lack of competence and their employment ultimately being terminated.

Whatever the approach, trend or process, the consequence of re-engineering for core business focus, more often than not, was that individuals found themselves forced to attempt to survive on their own, whether as individual or entrepreneurial service providers, consultants, in small or medium sized 'own' businesses or in partnerships with one or two other individuals, or in the highly competitive world of smaller organizations.

All these developments have been entrenched in a new terminological concept, referred to in the literature as "job-shift".

Another feature of the New World of work and the newly conceived employment environment, is its temporary nature. Most of the outsourced activities are tied to a fixed term contract, which expires with the effluxion of time. This is in sharp contrast with the employment environment of the previous world of work where the Roman-Dutch Law precepts reigned and the employment relationship was construed by the principle of *Locatio Conductio Operarum*, and is presumed to be permanent, or at least conceptually 'indefinite'. The trend now is towards impermanence in the sense that the contractor is brought in or the employee is re-deployed from his or her position as employee to provide a service. The relationship with the primary organisation ends when he or she has been re-deployed, albeit that the completion of the contract may be marked by the delivery of a product or service or by a fixed future date. Equally, the service provider is relied upon only for as long as the quality of the service, which he or she provides, is satisfactory or suitable and as long as the price charged for the service is competitive.

In this sense South Africa has followed a world trend, as shown by Lance Morrow (Time Magazine: 1993) who wrote,

“The world has entered the age of the contingent or temporary worker, the consultant and [the] sub-contractor, of the just-in-time workforce – fluid, flexible, disposable. This is the future! It's message is this, you are on your own!

For good (sometimes) and ill (often) the workers of the future will constantly have to sell their skills, invent new relationships with employers who must themselves, change and adapt constantly in order to survive in a ruthless global world.”

Whereas many [predominantly White] South Africans grew up in an environment of gratuitous, in many (if not most cases) readily available institutionalised employment within a world of work with a large degree of over employment, the trend to re-engineering for core business focus, has had traumatic consequences, especially for this group of workers. In this employment environment the future was regarded as secure through the precepts of implied permanence and institutionalised features such as predictable fixed benefit pension funds and medical aid schemes which were guaranteed to be maintained past retirement, and even until death. Furthermore the majority of employees perceived themselves to be safe, either by virtue of the exclusivity of their skills in areas of significant skill shortages, their qualifications, their perceived political exclusivity, or by virtue of legislative provisions such as the restriction prohibiting black miners from qualifying for and obtaining blasting certificates.

This perception of being safe and secure, which has been shown to be a myth by the changing trends in the world of work, bred a sense of complacency which has become entrenched over generations, with the result that many new job entrants specifically in the White community came to view this security as a 'birthright' to be had for the asking. It also led to many persons from previously disadvantaged communities having a certain expectation of obtaining an institutional job, getting a 'substantial' salary and being guaranteed safe and secure [institutionalised] corporate employment in the new, post 1994, political dispensation.

The experience in recent times has shown these perceptions of the White community and the expectations of the previously disadvantaged communities regarding institutionalized security of employment, to be a myth. As transformation and re-engineering became a reality with the consequential outsourcing of job

opportunities, an increasing awareness of job insecurity, the probability of outsourcing and the realities of job shift began to develop.

Because the initial transformation and outsourcing initiatives were focused on the support services in most organizations, many incumbents of core business activities were lulled into a false sense of security and it soon became common wisdom, probably propagated as a self-defense reaction, that persons in specialised functions, in areas of scarce skills, or those in core business activities, were assured of their job opportunities and inured against job shift. This reality also permeated into 'specialised' industries where most employees had been protected by legislative provision, uniqueness of skills and knowledge and by lack of access opportunities for previously disadvantaged workers. The mining industry is probably a prime example of this ethos of exclusivity due to skill, knowledge, experience and even culture.

The above mentioned common wisdom gave rise to a dichotomy in which incumbents of service or support services were forced to prepare themselves psychologically and in many cases financially for job shift, while incumbents in core business, specialization functions or skills shortage areas did little to prepare themselves for the possibility of such an event taking place. Once again the mining industry proved to be a perfect example of this dichotomy wherein incumbents in the support services in the industry were exposed to the ravages of job shift while the specialised and core business job incumbents persisted in their false sense of security based on exclusivity.

It was an awareness of this dichotomy, which gave rise to the research problem of determining the degree of awareness of the probability of job shift imminent in the various areas of

employment in the mining industry, and the concomitant readiness of the incumbents in the various functional areas for job shift.

The research problem may be postulated as a statement, that the incumbents of the various functional activity areas in the mining industry differ significantly with regard to the level of awareness of the probability of job shift becoming a reality for themselves as a consequence of their functional activities being outsourced and also with regard to their preparedness to respond to job shift taking place.

From this generic statement of the research problem the following research hypothesis may be distilled:

$H_1$ : There is a significant difference between the awareness of and preparedness for job shift between the incumbents of various occupational areas in the mining industry.

## CHAPTER 2

### THE ORIGINS OF WORK

#### Background

Since the origin of man in the form of 'Homo Erectus' of the specie 'Homo Sapiens', there has been an intimate relationship between the concept of work and the survival of man and those who depend upon him or her for survival. It has always been a well-understood axiom that man has to 'work' in order to survive.

The nature of the 'work' that man has had to do to ensure his survival and that of his family or dependants has however 'evolved' parallel to the developments of his life style. During the initial hunter-gatherer life style phase of man's development, the 'work' that he or she was forced to do related to the preparation for the hunt such as, the making of weapons, setting of traps, digging for roots and the search for other natural products such as fruit or berries.

During this hunter-gatherer phase of development, work activities were fully integrated and ultimately interrelated with the social life activities. In many more primitive societies this work/social interaction can still be found in rites and rituals. The San people of the Kalahari of South Africa for instance have many rites of passage from childhood to adulthood, which were closely associated with the skills of tracking, stalking, and ultimately the killing of game in the case of men and the finding of roots and bulbs in the case of women. Most of their dances also incorporated the movements of the hunters.

The above-mentioned parallel development and reciprocal interaction of the nature of 'work' activities and life style developments can be traced throughout the history of mankind.



The evolution from the hunter-gatherer to the domesticated agrarian social systems, can be equated to the evolution from work centering on hunting, to work related to the domestication of animals such as sheep and cattle and consumable plants such as maize and wheat. During this phase, life style evolved from a nomadic existence with temporary shelters to settlement in village communities with more permanent accommodation.

The emergence of technology as a determining force in both the work and life style environments had the effect of speeding up the evolutionary development process. This technology-based evolution has reached a stage where, at present, the evolutionary process is taking place in quantum leaps, often with extremely stressful and demanding consequences for man who has to adjust to this evolutionary development.

### The First Wave.

Perhaps the first technological development which impacted on the work-life style interface, and which speeded up the evolution thereof, was the sophistication of tools by way of the use of metals. This allowed man to take the first steps in the massification of production. Whereas a farmer previously had to rely on wielding hoes to cultivate and sow his fields, the use of metal allowed the development of wheeled ploughs, enabling him to exponentially increase the size of his crops.

The spin-off effect of this evolutionary development was of course a change in man's survival life style, in which he produced only enough to satisfy his own needs and those of his family, to the accumulation of wealth through over-production of requisite resources. This life style change triggered an evolutionary trend towards larger accommodation and the acquisition of commodities not required for survival only, and gave rise to a value system in which status and seniority was based on possessions.

A necessary and fairly obvious development emanating from the use of metals and its consequence of a society stratified on the basis of possession, was the development of more sophisticated weaponry. The development of weapons facilitated the dominance of one society over another, one group over another or even one person over another. This in turn allowed control over ever-greater deposits of resources, again facilitating social and inter-social stratification in terms of control or ownership of these resources. The development of weapons also gave rise to new skills and work activities that did not relate directly to the production of life style consumables, but did contribute markedly to the accumulation of wealth with which life style consumables could be acquired. Many similar developmental streams can be identified, but these would not contribute further to the understanding of the reciprocal interaction between work and life style activities.

A life style, in which possessions started to play a more important role, resulted in the parallel development of socio-economic systems to regulate society. One such parallel development, which needs to be highlighted, relates to the feudal societal system. In this system the land and every thing in it, including man and natural elements, vested in the ownership of a so-called feudal lord, often referred to as the lord of the manor. The feudal lord not only owned everything, including the people, but also had to protect his property. Consequently, he traditionally retained his people and property in a Castle.

As the numbers of his vassals and live stock increased, and as the feudal lord prospered through the work of his people in the production of life style consumables, the Lord of the Manner could not accommodate all within the walls of the Castle and consequently some people and animals were forced to live outside the Castle in villages.

These people established settlements within sight of the Castle, but soon villages sprang up further afield. As was to be expected the physical distance between the feudal seat and the villages soon resulted in a psychological and social separation and people invested more time and energy in producing for themselves and less for the feudal lord. This was tolerated by the latter as the feudal authority had an increasing number of people to produce for him.

Trade in excess produce developed among villagers, which led to the increased use of money as a universal means of payment. A consequence of the 'money economy' that developed was that people started specialising in certain crafts and selling their services and expertise for profit. The development of businesses for profit, made possible by the use of money, expanded the scope of economic activity and artisans and merchants could now ply their trade on a permanent basis without the necessity to produce food for their families. The feudal lords were however still the owners and charged taxes on business, trade and produce to sustain himself and those living in the Castle.

The forerunner of the present day's 'jobs' started to evolve in the villages where people began to specialise in one activity or trade. Services were hired out and soon craftsmen such as weavers, metalworkers and shoemakers were plying their crafts, in addition to their farming or shepherding duties. Traders or shopkeepers evolved to act as middlemen between craftsmen, farmers and consumers.

Craftsmen in specific villages or areas organised themselves in Guilds to protect themselves against the competition of other artisans in the same trade from other villages and from craftsmen who did not belong to the guild.

As villages became bigger and competition increased, the Guilds established uniform hours and wages for all workers in shops making the same goods. The members of Guilds were divided into three classes, namely: master craftsmen, journeymen and apprentices. The master craftsman was the proprietor and owned the raw materials and tools. He sold the goods manufactured in his shop for profit. The apprentice was a beginner and learner of skills, who learned the trade under the supervision of the master craftsman and usually received only his board for the work he did. After an apprentice had completed his training, he became a journeyman and was paid a fixed rate of pay by the master craftsman. The requirements for a journeyman to become a master were made very difficult by masters to protect their own numbers.

Commerce increased and the villages developed into towns and cities. Europe saw an increase in production to supply the armies taking part in the Crusades (1095-1291) to Palestine. The increase in demand brought about by the Crusades led to an increase in trade and also the rebirth of banking, which was discouraged by the Roman Catholic Church at the time.

The revival of trade and commerce in Europe was temporality halted by the outbreak of the so-called 'Black Death', a bubonic plague carried by rodents and their parasites such as fleas to human beings, which led to the death of 33% of the European population from 1320 to 1460.

The process of revival continued after the Black Death in what is known as the Renaissance (1500 to 1700), where Europeans rediscovered ancient art and knowledge. This led to scientific developments that challenged the ancient and traditional schools of thought, such as Copernicus (1473-1543) who developed a system with the sun as the center of the universe and not the earth and Isaac Newton's (1642-1727) law of gravity and the laws of physics. (Microsoft Encarta Encyclopedia, 2000)

The combination of an increase in trade and scientific and technological advances led to a greater demand for goods and services by the population freed from the restraints of feudalism. This led to industrialisation and caused a change in the life style of the population.

The evolution from a life style of producing commodities for personal use to a life style of selling services for money and paying taxes heralded the end of a period in the development of man, described by Toffler (1980:23) as 'The First Wave.'

### The Second Wave.

In what Toffler (1980:35) described as the second wave of socio-economic development, the industrial revolution started around 1780. Although there were various factors that heralded the start of the industrial revolution, the trigger was the discovery of the steam engine by James Watt (1736-1819), a Scottish inventor.

There were already steam engines at work at the time, but in 1763/4, Watt was asked to repair a Newcomen engine. In the Newcomen engine, the steam was condensed back to water by cooling the working cylinder, which then had to be re-heated. Watt realized that he could keep the cylinder hot permanently by condensing the steam in a separate condenser, which could be kept cold permanently. Watt thus turned the atmospheric engine into an actual steam engine in which the power was derived from steam and not air pressure. This development increased the power of the steam engine and ensured continuous running over extended periods. Watt further devised a system of gears, using a crankshaft to transform vertical power from pistons into rotational power. In 1782 Watt also invented a rotary engine, which proved to be the first reliable source of power. This was used in the

manufacturing industry and drove corn mills and textile mills. (Henderson, 1969:39)

This technology radically changed the way in which people worked and the nature of work. Muscle, wind and waterpower were no longer required and were replaced by a more powerful and reliable source of energy. Technology developed rapidly with the aid of the steam engine in the fields of mining, manufacturing and transportation.

The ideas of a Scottish philosopher Adam Smith (1723 - 1790) in his classic work 'The Wealth of Nations' (1776) gave rise to a new economic order. In line with the ideas of Smith, entrepreneurs or risk takers established businesses such as factories and accumulated an economic surplus, which was then ploughed back to establish further business ventures. The principle of a division of labour was used and the production process was divided into individual operations, which made mass production of goods possible. The individual who produced articles by hand on a small scale, could not compete with the high volumes produced by the factories and was forced to stop production and find employment at the factories. Businessmen became rich and powerful and could afford to invest their profits and capital in more business ventures. These developments gave rise to capitalism as a capitalist could choose where to invest his money and could dictate the conditions under which people were employed to ensure further capital growth and investment. Capitalists bought up the communal lands to which English people traditionally had access to farm. The loss of land deprived the population of a traditional means of making a living and forced them to work in factories and mines. (Bridges, 1995:32). This change had a negative effect on society, as people found it hard to adapt to the change. The rules and laws of society were slow to adapt to the changes in the nature of work and to provide protection to the

population. This led to various forms of hardship of which the following is an example of the plight of child labourers:

"Children were taken into the mine to work as early as 4 years of age. In some districts they remained in solitude and darkness during the whole time they are in the pit and according to their own account many of them never saw the light of day for weeks, during the greater part of the winter season. At different ages, from six years old and upward, the hard work of pushing and dragging the carriage of coal from the workings to the main ways or to where the foot of the shaft begins. Passages in some mines were so small that even the youngest children could not move along them without crawling on their hands and feet in which unnatural and constrained posture they dragged the loaded carriages after them."

The above is a description from the Report of the Children's Employment Commission (Mines) of 1842. (Hope-Simpson, 1978:79). The referral above that children at the age of four worked in mines seems unrealistic and may have been an over exaggeration at the time to focus attention on the plight of children.

The polarization between the masses of employed on the one hand and the owners or managers on the other hand, resulted in the rise of a working class consciousness, which provided the necessary impetus for the growth of trade unionism. The German philosopher Karl Marx (1818 - 1883) was influenced by this division that motivated his literary work 'Das Kapital' in 1867. This work reflected an opposition to the thoughts of Adam Smith in that Marx advocated an economic system where the accumulation of wealth remained with the workers and not with individuals as was suggested by Smith. The economic system advocated by Marx was used as the basis for Communism in Russia after 1918 and

thereafter in various other countries across the world. (Microsoft Encarta, 2000)

Capitalism, being the ownership by one person of the 'tools' of production, namely, land, capital and labour, regarded labour as a tool of production with little consideration to the needs of people. The consequential concept of 'selling labour', led to the disempowerment of the producers of such labour, who had no influence on their conditions of employment. (Bendix, 1996:8) An artisan could no longer work for a master craftsman as the artisan was employed on a full time basis by the factory or mine owner. This led to a decline of the Guilds, which were replaced by trade unions where specific groupings of employees organised themselves in order to use their collective power to challenge the economic power of Management to gain more favourable conditions of employment.

The change from 'doing a job' to 'having a job' spread over into the Western world and also to America. The nature of work changed from skill related activities, such as a craftsman, to being a part of the product machine process, such as a worker on an assembly line. Work was further depersonalised as people were hired collectively under set conditions of employment. It took time, but the new jobholders had to adapt to new rules and values, such as methodical habits, punctilious attention to instructions, fulfillment of contracts of time and the sinfulness of embezzling materials.

The machine and mass production, which was a consequence of industrialisation, also had an influence on the products people bought. It was argued by capitalists that, through mass production, goods could be available to all people, not only the rich. England could then control international commerce and accumulate wealth that would cascade down to the population to give everybody a better life. (Bridges, 1994:37)



Although from diverse socio-economic philosophies, the capitalist, Henry Ford, and the Marxist, Joseph Stalin, could agree on the virtue of mass production. The larger the quantity, the cheaper the unit cost due to the optimisation of resources and fixed opportunity costs.

Scientific management was applied in organisations and companies, and the introduction of a bureaucratic and pyramidal authority structure was conducive to optimize limited resources and increase production. Consumer goods, such as medicine, appliances and processed food were produced in factories in unprecedented quantities and found their way from production centers to all customers at a price that (almost) everybody could afford. (Finley, 1999)

Industrialisation had an effect on the population. Blanpain (1997) identified that during that period almost everyone who could work had a job, neatly 'tailored' to fit the person and to fill a need in the organisation. Almost everyone earned a 'reasonable' salary; and was a 'brave' consumer of the produce of the mass production of consumables.

People had permanent jobs in companies and conditions of employment improved from those during the Industrial Revolution, *inter-alia* through the actions of Trade Unions. Legislation was passed to protect the interest of employees, such as labour legislation, social security, minimum wage legislation, equity and anti-discrimination legislation. Trade Unions could use their collective power and the threat of industrial action to engage employers in collective bargaining to improve conditions of employment.

Employees were satisfied with their lives as concepts such as the Psychological Contract between employer and employee had the

goal of improving the life of the employee together with furthering the economic goals of the employer. This unwritten contract provides that the employer will give the employee the opportunity for development, advancement, and ensure income security. In return, the employee will put all of his abilities at the disposal of the employer to reach the economic objectives of the organisation. The objective of this 'contract' was to create a 'win-win' situation where the organisation could reach its economic goals and at the same time employees could achieve their personal goals.

People felt secure in the knowledge that a permanent job would ensure income security, provide for medical aid as well as retirement. Long serving employees had an expectation that their children would be able to get permanent employment at the same company.

The work and life style of the population was in pace with the technology at its disposal. The interaction between technology and life style was beneficial to both employers and employees.

### The Third Wave

Since the fall of the Iron curtain, countries in Eastern and Central Europe, China and other Eastern Asian countries have developed trade relations with the West. There are thus fewer obstacles to the free movement of money, information, technology, goods and services. Companies can invest worldwide where the market conditions are favourable. International competitiveness dictates that the best product or service should be acquired at the best price. International Companies have the whole world to shop for the best buy. It is therefore common to see a ship, built in Japan with German technology, owned by a British Company, registered in the Bahamas, under a Greek master with a Philippine crew,

carrying goods, financed by the USA, from the Peoples Republic of China to Nigeria.

Communication and information technologies have developed rapidly during the last thirty years. Fifty million people were navigating the Internet within its first four years. The information and communication revolution dramatically affected society and the labour markets in particular. Due to new technologies, Industrial society has moved to an Information society. This transformation is accurately described by Blanpain (1997) as from 'Fordism to Gatesism', referring to the assembly lines and permanent jobs made famous by Henry Ford as 'Fordism' and the era of information technology impersonated by Bill Gates of Microsoft Technologies, as 'Gatesism.' A competitive advantage became a function of knowledge, technology and intellectual rights, which could be sold to customers.

The shift to an information society is however more than merely a shift from the primary (agriculture) to the secondary (manufacture) sectors. The world is moving into the third sector, namely the services sector. This is evident in the fact that, in Europe, less than 10% of the economically active population is left in agriculture, less than 30% in manufacture and more than 50% has migrated to the services sector. The situation in South Africa is different in that employment in agriculture is at 10,4% and manufacture at 14,3%. (Population census, 1996)

The consequence is that economic value is shifting from material to non-material products. A competitive advantage is achieved by knowledge, invention and intellectual property. The cost of a car is to a lesser extent based on the cost of the chassis or the wages of the assembly-line workers, but is derived from the expenditure and investment in design, research, development, patents, licenses, and financing. A single enterprise does not have to maintain these services, as most of them are not required

constantly but only at specific points. Via the electronic highway, the best quality services could be accessed at the most competitive price, without delay and from anywhere in the world.

Companies are outsourcing or using contractors for non-core business functions only when required with the advantage that the best service could be used at the best price. Information technology allows companies to source work independent of the location of the provider, who could be anywhere in the world. This is in contrast with in-house services where staff is paid for their time at work. External service providers are paid for what they produce or the services they deliver. Total quality, at the best price, could be bought in at the specific required time. People are required to do a specific job for various clients by using information technology such as the Internet, electronic mail, wireless application technology and cellular telephones to create a 'virtual office' and secure 'virtual employment' on a temporary or contractual basis to various clients in order to market their own specialist services and skills. (Blanpain, 1997) These so called 'knowledge workers' can generate ideas and transmit these electronically as 'intangible' or 'immaterial' products to a client.

The hierarchical organisation with levels of authority was functional in the era of Fordism, but has changed towards flatter hierarchies and project-based teams. Individuals can therefore not rely on companies to map out career paths, because of the limited number of permanent jobs in the organisation. The onus is on the individual to map out a career and pursue their own chosen route. The concept of job security is replaced by 'employability security' where individuals must have the ability to develop and market their own skills and ideas, rather than rely on the sequence of jobs provided by the company. Individuals need career competencies and not just job skills. Hardijzer (2000) calls these career competencies 'metaskills' which is the skill to acquire new skills. Individuals can then map out their own career based on

their experience, education, training and additional metaskills acquired.

In the process of mapping out a career, individuals can use networking, inside or outside the organisation, where the employee is independent and in a sense becoming his own employer. Work will be done in teams with members from inside or outside the organisation working together. Companies will be composed of a small core of permanent employees directing the work done by outsiders.

Job losses are further caused by other factors such as automation, mechanisation and robotisation where repetitive work in particular will be shed on a massive scale. Routine production and service tasks such as supervision and the application of specified rules are under threat from automation and competition from low wage countries, such as China and India. Middle and routine management jobs are also under threat.

Routine service provided by people directly to customers, such as in banking, finance and insurance are becoming automated and probably 50% of the jobs in these sectors will be shed in the near future as the ATM and on line banking takes over. Fast foods, hotels and the leisure industry are following suit in that orders and reservations are done electronically. People have to adapt to this change, as it will change the nature of work available in the market.

Creative work is the only type that is high in demand. These are mostly non-routine activities that enable certain problems to be solved more effectively by means of creative ideas. Abstraction, systematic thinking, experimentation and communication with others are some of the abilities needed for creative thinking. Companies need innovative ideas for products and processes to

remain competitive. Individuals will have to acquire skills in this field to be successful.

Work has thus reverted back the period before the Industrial Revolution where people were 'doing a job' and not 'having a job' as was necessary during the period of Industrialisation, except that with a computer, modem and cellular phone, he or she could do most work from anywhere in the world.

This is in contrast to the period of 'Fordism' (1950 to 1980) where almost everybody had a permanent job with long-term benefits such as medical plans and pension/provident funds to which the employer and employee contributed. Employers, Trade Unions and the State had social plans in place to care for the sick, the handicapped, to pay pensions, and to support the unemployed. Employees organized themselves in Trade Unions and used the process of collective bargaining to secure social benefits from the employer.

The International Labour Organization estimated that at the end of the year 2000, 160 million workers were unemployed of which 110 million were from developing countries. (International Labour Organization World Report: 2000)

People are now faced with a job-shift from a permanent to a temporary job and will react differently to the challenges of job-shift such as de-jobbing and mapping out their own careers. It will be necessary to adept 'new habits' to be successful, take risks and have the willingness to push oneself out of established comfort zones. However, humble self-reflection is necessary where the individual must make an honest assessment of successes and failures and take calculated risks based on assessments made on a collection of information and ideas from others. It is necessary to develop a propensity to listen to others, and a willingness to view life with an open mind.

People engaged in different occupations or fields may react differently due to the nature of their professions. Some professions are related to core functions only, while others may be in demand from a variety of alternative industries. A mining engineer needs mining operations to ply his skills, while an accountant can work for most industries. In the world of job-shift, people in these core functions will have to acquire additional meta-skills to improve their employability security.

The impact of job-shift on the population is further aggravated by rigid monetary policies adapted by Governments. In terms of globalisation, a difference is made between money and goods or services. Only 10% of the billions of dollars that are transferred by means of electronic transactions across the world are payment for goods and services. The rest is money itself being invested anywhere to maximize profits in the shortest term. Governments cannot control this flow of capital, and need to follow rigid monetary policies to avoid overspending. Overspending may lead to the financial markets recalling and disinvesting their funds. This has a negative effect on job creation programs as Governments do not have additional money to spend on such programs. Rigid monetary policies increase unemployment in general and impact negatively on the creation of permanent jobs due to a shortage of capital, high interest rates and low economic growth.

Another consequence of rigid policies is that there are little funds left for social policies as it might increase public spending, which should be controlled to attract foreign investments. This leads to a cut in public jobs and a reduction in social spending on benefits, such as pension and medical aid assistance, which increases the cost of labour. For any company, labour incurs a fixed cost and can influence the competitiveness of a company if it is not properly controlled in that it would increase the price of the

product or service. The high cost of labour may motivate a company to outsource certain functions, where a competitive price is paid for a specific service. A company may consider relocating to a country with cheap labour.

The steady increase of world population further aggravates the consequence of a shortage of funds for social policies. Every hour 12 500 babies are born which adds 1 billion people to the earth every 10 years. The population of developed countries however remains constant, which means that the population explosion is largely in the developing world rather than the first world. There are thus millions ready to work in economies where the number of jobs are decreasing.

A second phenomenon associated with the population explosion, is that of an aging population, which places an additional burden on social security budgets, such as pensions and medical aid funds.

All people may not be able to adapt to job shift, which may cause a larger division between rich and poor. In South Africa and most developing countries, the situation is worsened by other factors, such as poverty, poor education and a dependence on agriculture.

#### Developments in South Africa.

The South African population is not well equipped to handle the changes that are associated with job shift. This is due to the poor level of education, which has the effect that the majority of the population is engaged in elementary and routine occupations. South Africa is described as a developing country with a real growth rate of 0,5% in 1998, which increased to 1% in 1999. In the second half of 1999, it increased to 3%. This slow growth rate may not be able to provide employment for the growing population.



The South African population is characterised by a low level of education, as a result of inadequate education in the past. The level of education in October 1996 is illustrated below:

Table 1. *Percentage of the population aged 20 years by highest level of education completed-October 1996, [Population Census, 1996:37.]*

Level of Education	Percentage
Higher education:	6,2%
Grade 12 (Std.10):	16,4%
Some secondary:	33,9%
Some primary:	24,2%
None:	19,3%

An effect of poor education is that 30% of the population is engaged in elementary occupations with a shortage in Managerial positions.

Table 2. *Percentage of the employed aged 15 - 65 years in occupation category-October 1996. [Population Census, 1996:49.]*

Occupation	Percentage
Managers:	4,6%
Professionals:	10,8%
Technical:	6,7%
Clerical:	8,9%
Sales/services:	10,2%
Skilled agriculture:	4,5%
Artisans:	16,1%
Operators:	8,1%
Elementary:	30,0%

In order to correct the situation, the Government is spending a large portion of national expenditure on social services, the majority of which is spent on education to uplift the population.

Table 3. *Functional classification of the expenditure by National Government, Provincial Government and Social Security Funds.*

[Reserve Bank Quarterly Report, September 2000:61]

Spending	Percentage
Social services:	44,7%
General services:	12,5%
Interest payments:	19,1%
Economic services:	8,5%
Protection services:	15,2%

The majority of spending on social services was for education and health. A relative small percentage was allocated to economic services. The effect of this spending is that a large part of the population is engaged in community related activities.

Table 4. *Percentage of the employed aged 15 - 65 years by economic sector. [Population Census, 1996:55]*

Social Spending	Percentage
Manufacturing:	14,3%
Trade:	14,1%
Agriculture	10,4%
Finance:	8,7%
Construction:	7,1%
Mining:	6,9%
Transport:	6,2%
Electricity:	1,4%
Community:	30,8%

The economically active population between the ages of 15 to 65 years of age has increased by 13,3% in 1999 and the non-economic active portion of the population, between the ages of 15 to 65 years of age, showed a slight decline of 0,03%.

In contrast, employment in the formal sector has decreased by 0,72% 1999 and as a result of the increase in the population and declining employment opportunities, unemployment increased by 28,8% in 1999.

The trend of declining permanent jobs in South Africa was confirmed in the South African Reserve Bank Quarterly report (March, 2000), which indicates that there was a decline of 81 000 jobs in the formal non-agricultural sector from December 1998 to September 1999. From September 1998 to September 1999, jobs in the private sector decreased by 1.5% in total, but more significant is that the only increase was in trade, catering and accommodation services while construction and gold mining recorded the biggest declines. Employment in the informal sector increased by 91,4% from 996 000 in 1996 to 1 907 000 in 1999.

Various companies in South Africa have outsourced some of their functions. In a survey done by Kelly of Andrew Levy & Associates on 101 companies, reported in the South African Labour Bulletin, (Volume 23, Number 3, June 1999:38.) it was found that 68,3% of the companies have outsourced some of their functions, which effected 5,7% of the workforce.

The occupations outsourced were:

Table 5. *Occupations outsourced in South Africa.* [Kelly, 1999]

Blue-collar workers	96,6%
Administrative staff	7,8%
Managers	1,4%
Executives	0,2%

Most common functions outsourced:

Table 6. *Most common functions outsourced.* [Kelly, 1999]

Cleaning	21,9%
Security	19,3%
Canteen/catering	11%

In this survey, 94% of the companies reported that they would recommend outsourcing and 65% were considering outsourcing in the next two years.

As a developing economy, South Africa is not well positioned to create employment for its citizens. The economy is growing at a rate of 3% per annum and it is doubtful whether it will be able to absorb an additional 2 398 000 people to the economic active population.

One of the underlying problems is the poor level of education, in that only 43,5% of the population has none to 'some primary' education. The Government is addressing this and 44,7% of fiscal spending is channeled into social services, mostly education. As a result, 30,8% of the EAP is engaged in community related jobs. Although community related work would have an economic benefit in the future, people engaged in such occupations, do not contribute to the current economic growth of the country. Economic growth is essential for job creation.

The threat to permanent employment in South Africa is real, as 47% of the economic active population is engaged in elementary work (30%), as operators (8,1%) and clerical occupations (8,9%), that may be replaced by automation.

The majority of services outsourced in South Africa were service or support functions, such as cleaning, security and catering. There are various non-core activities that can still be outsourced, such as maintenance and transport. South African companies may be forced into the direction of concentrating on core business to remain competitive in the global market. The relatively low number of technicians available in South Africa (6,7% of the economic active population) will mean that some of the activities outsourced may go to foreign contractors.

Only 1,4% of occupations outsourced were Managerial positions and it can be expected that industry will start to target Managerial positions in future. Managerial positions are "expensive" and may become redundant as companies unbundle or restructure.

### Negative impact resulting from the rapid development of Information Technology

Unfortunately there are negative aspects related to rapid development and use of information technology. Many, if not all businesses are becoming dependent on information technology. The information highway is prone to attack from individuals with ulterior motives. Computer viruses created by such individuals may disrupt or cause a breakdown of systems resulting in an 'information black out', bringing virtually all business to a standstill. Companies and governments could be held ransom by criminals or terrorist groups by means of a threat to disrupt communication systems. Computer hackers are able to invade the privacy and confidentiality of individuals and companies and in the process acquire illegal industrial intelligence or find themselves in a position to defrauding companies and banks of vast funds. An example of the risk associated with electronic information systems was given by Toffler (1994), who indicated that the whole Desert Storm operation in the Persian Gulf was dependent on American communication and surveillance satellites. If any of these were attacked and destroyed, the Allies would have lost their technological superiority. However, it was revealed that the Iraqi Scud missiles used the American Global Positioning System for navigation.

In order to protect themselves against the above risks, companies and governments need to have contingency plans in place to provide the necessary protection against unauthorized invasion of data and systems.

### Negative impact of job-shift and globalisation

The Trade Union movement as well as a large segment of the world population is opposed to the job losses associated with globalisation. Madisa (2000) views it as an unnatural

development, which may be reversed by targeting the institutions, such as the World Trade Organisation and the World Bank, as well as multinational corporations. (Madisha, 2000) The so-called 'Battle of Seattle' in 1999 where a meeting of the World Trade Organisation was disrupted by protesters, was the beginning of active protest against globalisation. However, it is interesting to note that the protest action was organised by means of the Internet.

Trade Unions are reacting to job losses not only by means of protest action, such as demonstrations and stay aways, but also by challenging legislation regarding retrenchments and overtime. A demand from Congress of South African Trade Unions is to amend Section 189 of the Labour Relations Act (66 of 1995) to force employers to reach consensus with Unions regarding the decision to retrench and not merely to consult.

The International Confederation of Free Trade Unions has expressed the opinion that globalisation has split the world into rich countries with developed economies and poor countries with weak and uncompetitive economies. In order to address the situation, they have embarked on a campaign to protect employee rights by influencing the World Trade Organization to implement trade sanctions against countries that violates worker rights. Trade Unions view trade subsidies to countries that allows violations of workers rights, as illegal trade subsidies. (South African Labour Bulletin, Vol.23, No.3 June 1999.)

The focus of Trade Unions is to keep people in jobs by limiting retrenchments and dismissals and to call for further employment creation. Trade Unions are thus concerned about declining permanent jobs as this will also impact negatively on their membership base. Traditional Trade Unions do not normally cater for people doing contract work or people that are self-employed. In South Africa, Unions such as the Self-employed Workers Union

have been formed for contract or non-wage workers, but has attracted a small membership to date. (Olivier, 1998)

South African labour legislation provides some protection for people not in the permanent employ of a specific employer, but these so called 'atypical' employees (Olivier, 1998) are excluded or enjoys limited protection from the provisions of labour legislation, due to their specific working arrangements. The International Labour Organisation in their World Employment Report 2001 ([www.ilo.org](http://www.ilo.org)) confirms this notion in that some of the so-called self-employed people are dependent on a single employer but without the benefits normally provided for in an employment contract.

It is generally the case that when a section of a company is outsourced, that the contractor will offer employment to the employees in that function or section. Unfortunately the contractor may not provide the same benefits and wage as the company. The worker has the choice to accept the position or not, but considering the high unemployment in the country, most of these workers are forced to accept, even at lower wages. However, if outsourcing and contracting could be linked to empowerment where ex-employees are given the opportunity to become independent businesses, it could provide an avenue for people to profit from outsourcing.

Protection for temporary employees in South Africa is provided by the Basic Conditions of Employment Act in section 6(1)(c), 19(1), 28(1) and 36 in that the provisions on working hours, leave, particulars of employment and termination of service applies to all employees who works for more than 24 hours per month for a particular employer.

Protection for employees contracted by temporary employment services is provided in terms of section 82 of the Basic Conditions



of Employment Act, which provides that an employee procured or provided to a client by a temporary employment service, is the employee of the temporary employment service and not the client. The temporary employment service is thus responsible to ensure that the requirements of all relevant Labour legislation are met.

The Labour Relations Act provides security for fixed term employees in that a fixed term employee can reasonably expect that a fixed term contract should be renewed on the same terms and conditions. If not, it should be regarded as a 'dismissal' and the provisions on procedural and substantive fairness as set out in schedule 8 of the Labour Relations Act regarding unfair dismissals, followed.

Psychologists are counting the toll of downsizing and retrenchments in terms of human suffering. Anxiety, stress, depression, a loss of self-esteem, physical ailments and even suicide may result from losing a permanent position. The employees left behind are also affected and anxiety and stress levels usually remain high. In the article '*Downsizing backfires on America*' Clay (1998) states that Companies do not realize the true costs of downsizing, as short-term savings do not equal long-term savings. The so called '7% rule', which describe the tendency of companies' stock to rise by 7% after an announcement of downsizing, has been used by large numbers of Companies for short-term gains, but it was found that downsizing without making other changes as well, does not increase performance in the long-term. (American Psychological Association, January 1998. [www.apa.org/monitor](http://www.apa.org/monitor))

Various international pressure groups have been formed to consolidate a reaction against globalisation. Extended use is made of the Internet and opinions, comments and examples can be made on various sites, such as 'International forum on

Globalisation' ([www.ifg.org](http://www.ifg.org)), 'New International Co-operative' ([www.oneworld.org](http://www.oneworld.org)) and 'About Globalisation.com' ([www.aboutglobalization.com](http://www.aboutglobalization.com)).

### Conclusion

Globalisation and job-shift that is closely associated with globalisation, is taking place throughout the world and also in South Africa. Although there are some protection for the 'victims' of job-shift, it is clear that it will have a major impact on society due to the change from a permanent job to a non-permanent job.

The aim of the study is to investigate the preparedness for job-shift among middle managers in South African.

### **CHAPTER 3**

### **RESEARCH DESIGN**

#### **Introduction**

In the previous chapters, the reasons for and consequences of job shift on the labour market and for the population were discussed.

The primary objective of the study was to establish whether there was a significant difference between the preparedness of different occupational groupings, namely mining related employees, Human Resources related employees, Finance related employees and Engineering related employees in the Middle Management sector towards job-shift or the loss of permanent employment in the South African hard rock Mining Industry.

The second objective was to look at the preparedness of all categories of Middle Management in the South African hard rock Mining Industry towards job shift.

The Middle Management group was selected, as they are a group of professionals mostly with tertiary qualifications who are economically mobile with a transportable knowledge and skills base. Senior and Executive Managers were excluded, as their functions are strategic and not operational as the Middle Managerial group.

#### **Sample**

The universum consists of employees engaged in the South African hard rock Mining Industry, but it was decided to draw a sample from the Middle Management group, (Patterson grading D1 to D4) excluding Middle Managers from Metallurgical plants as these Managers are engaged in Metallurgical processing and not involved with the activities of mining.

The staff structure and activities of all hard rock mining operations, such as platinum and gold mines, are homogenous. A sample taken from one mine could therefore be regarded as being representative of the industry and the results can be extrapolated to any other hard rock mining operations.

The sample was taken from a Platinum mine in the North West Province of South Africa and consists of the following four occupational groupings:

Table 7. *Occupational Categories*

1.	Mining related employees
2.	Human Resources related employees
3.	Finance related employees
4.	Engineering related employees

The main functions of these officials are discussed below:

'Mining related employees' are employees engaged in mining activities, which is the core business of the Company. This group consists of Mine Overseers, Operations Managers, Geologists, Surveyors, Ventilation Officials and Safety Officials. An Operations Manager typically manages a shaft with three to four Mine Overseers and service personnel reporting to him. A Mine Overseer is in control of an underground section of approximately 350 employees.

'Human Resources related employees' are engaged in the functions of Manning, Training, Industrial Relations and Remuneration.

'Finance related employees' are engaged in financial and management accounting functions.

'Engineering related employees' are engaged in mechanical and electrical engineering maintenance and construction functions.

Because of the number of officials on the mine where the study was done, the ready access to these officials, the use of computer technology available to all these officials which significantly increased the probability of responses and finally the need for an optimally representative sample, gave rise to the decision to include all the officials in the designated categories, in the sample.

### The Measuring Instrument

A questionnaire, attached as annexure A, was designed to reflect the state of preparedness for job shift under the variables discussed below with the purpose to identify a causal relationship between the independent attribute variable (effects of job shift) and the dependant variable. (Occupational categories)

The questionnaire is a self-designed instrument constructed to gather specific information and contains questions where respondents were asked to make a choice between set responses.

The independent variable in this study is the phenomenon of job-shift and the various manifestations thereof in the workplace such as job loss, redundancy and the choice of alternative non-permanent jobs. These variables are the presumed cause of the dependable variable, which is discussed later. The independent variables, job-shift and its manifestations, are not active variables as they cannot be manipulated by the researcher and are thus described as attribute variables, which could be measured. (Kerlinger, 1973:38)

The independent variables or effects of job-shift consists of the following:

1. General awareness of the phenomenon of job shift.
2. The choice of alternative non-permanent occupations opposed to permanent employment.
3. The changes of success in various fields of non-permanent employment.
4. The negative aspects associated with non-permanent employment.
5. The willingness to move from a present occupation and industry to an alternative occupation in an alternative industry.
6. Additional skills required for non-permanent employment.
7. Additional attributes required for non-permanent employment.
8. Knowledge, skills and application of information technology as a vehicle for non-permanent employment.

The dependant variables in this study are the awareness and preparedness for job shift and the consequences thereof on various occupational categories of Middle Managers in a hard rock mining company as set out in Table 7.

Numerical values were assigned to the occupational categories to make a distinction between the categories. The dependant variable may be regarded as nominal (Kerlinger, 1973:39) because the numerical 'values' assigned to the categories were for 'labeling' purposes (Kerlinger, 1973:435) and do not have a mathematical value. The numerical values can thus not be manipulated by means of mathematical functions such as addition or subtraction.

The instrument provides for all demographic factors that could affect perceptions of job shift, i.e. age, gender, home language, qualifications and occupational groups.

The nature of the questions asked in the questionnaire is open and not specific and as such no validity or reliability analysis was done.

### Data collection

The negative aspects of mail questionnaires as expressed by Kerlinger (1973:414) was noted and it was decided that because of the geographic distribution of the sample and the knowledge that the majority of the potential respondents had access to and relied on Electronic communication in the execution of their daily functions, to use the E-mail facility to distribute the questionnaire to the respondents.

This method also increased the speed of communications and gave the researcher the ability to prompt respondents to return the completed questionnaire. Respondents were given the option to return the questionnaires by means of the E-mail facility, or to respond with a hard copy by using the company internal mail facility. The questionnaire with a letter of introduction was thus E-mailed to all respondents except Mine Overseers who did not have E-mail facilities. Operations Managers were requested to print and hand questionnaires to the Mine Overseers at an operational unit. The letter of introduction is attached as annexure B.

A total of 147 questionnaires were distributed and 82 (55%) were returned back. Kerlinger (1973:414) indicates that a response of 50% to 60% could be expected from a questionnaire mailed to respondents and as such the number of responses received were accepted as normal.

### Statistical analysis

The responses were entered on a Microsoft Excel pivot table from where the responses from all questions as well as for specific groupings could be accessed.

The data was analysed using the statistics function provided by Microsoft Excel.

Frequency tables, presenting a numerical presentation of the distribution of the data, were compiled. In certain cases cross tabulation tables or two-way tables are used for more than one variable. (Kerlinger and Lee, 2000:194)

Percentages were used to express the ratio of responses. However, percentages alone did not indicate whether the differences could be regarded as significant or as pure chance or coincidence.

In order to determine the significance of ratios or statistical difference, a simple yet most useful statistical test, (Kerlinger and Lee, 2000) the chi-square test for independence was used.

The departure of the chi-square test is a measurement of obtained (actual) frequencies and frequencies expected by chance. The expected frequencies for frequency tables were calculated by means of the average of frequencies. The average signifies a situation of 'no difference' between frequencies, as could be expected when a balanced coin is flipped and the number of 'heads' and 'tails' would probably be equal. The probability for the number of 'heads' is 0,5 and for 'tails' also 0,5 of the total number of flips. Any deviation between the number of 'heads' and 'tails' would be chance. The principle of probabilities can also be applied to other 'events' such as that the probability that a six will



turn up on any throw of a die, should be  $1/6$ , as there are six sides to a die. (Kerlinger, 1973:95)

In one-way or one-dimensional tables with one variable, the average of frequencies was used as the expected value. (Kerlinger, 1973:167) In two-way or two-dimensional tables the ratio between the product of rows and columns to the grand total was calculated and shown in brackets in the right corner of the cells in the frequency table. The actual value is shown in the center of the cell.

The chi-square test was performed by calculation the deviation between the actual and expected frequencies as an indication as to whether the deviation was a result of chance or not. The chi-square value was determined by calculating the sum of the squares of the difference between the actual and expected frequencies divided by the expected frequencies. The larger the chi-square value, the greater the actual frequencies deviate from the expected chance frequencies. It is however necessary to know the 'degrees of freedom' to give meaning to the chi-square value. (Kerlinger and Lee, 2000:235)

'Degrees of freedom' (df) defines the latitude of variation contained in a statistical problem in terms of the level of confidence. Chi-square tables are usually used to derive the level of confidence for the chi-square value, but in this study the value was returned by the statistical function for chi-square by the Microsoft Excel program. The 'degrees of freedom' is the product of the number of rows minus one and the number of columns minus one and with this value, the level of confidence could be read from the chi-square tables.

The  $< ,05$  level of significance was used. This indicates that from 100 trials an occurrence could not occur by chance more than five times. The  $,05$  level of confidence is used in most social science

research projects as it is considered neither too high nor too low. Some researchers prefer the ,10 level of confidence, which is very high, and could be described as a 'practically certainty', and was not considered appropriated for this study. (Kerlinger and Lee, 2000:237)

The chi-square test enabled the researcher to determine whether there was a significant difference between the responses received from various occupational categories or whether the differences were as a result of chance.

The hypothesis as set out in chapter 1 could then be accepted or rejected.

**CHAPTER 4****RESEARCH FINDINGS**

The responses to all the questions are tabled with histograms in annexure A. The calculations for the expected values are also shown in annexure A.

The data is interpreted in this chapter with tables. The analysis of the findings is done in Chapter 6.

Table 8. *Distribution table of the age profile of the respondents.*

Age	Number of responses
25 - 30	8
31 - 40	28
41-50	38
51 +	8
TOTAL	82

The age profile indicates a "mature" sample with 60% of respondents between 40 and 50 with only 23% between 31 and 40 years of age. This was predictable as it usually takes a few years before a candidate develops to the Middle Managerial levels.

Table 9. *Distribution table of the gender profile of respondents.*

Gender	Reponses
Female	11
Male	71
Total	82

The majority of responses (86,5%) were from males as could be expected in a heavy industry such as mining. Females are mostly employed in administrative positions.

Table 10. *Distribution table of the qualification profile of respondents.*

Highest qualification	Reponses
Std 8	1
Std 9 - 10	14
Technikon diploma	29
University degree	37
Total	82

Results indicated that 80,5% of respondents have a tertiary qualification. This provides for an informed opinion regarding the phenomenon of job-shift.

Table 11. *Distribution table of the language profile of respondents*

Home Language	Responses
Afrikaans	58
English	19
Tswana	4
Other	1
Total	82

Afrikaans is the dominant language with 70,7% responses and English with 23,1%. The other languages were poorly represented.

Table 12. *Distribution table of the occupational category of respondents*

Occupation	Responses
	(20,5)
Engineering	12
	(20,5)
Finance	15
	(20,5)
Human Resources	27
	(20,5)
Mining Related	28
Total	82

$$\chi^2 = 0,02; df = 3; p < 0,05.$$

In this analysis no significant difference at 5% level of confidence between the numbers of responses received per occupational category could be found. All occupational categories were thus significantly represented.

Table 13. *Distribution table of the awareness to the phenomenon of job shift.*

Awareness	Responses
Aware	78 (41)
Not aware	4 (41)
Total	82

$$\chi^2 = \infty (3,03 \times 10^{-16}); df = 1; p < 0,05.$$

A highly significant number at 5% level of confidence of respondents were aware of the phenomenon that companies were reducing the number of permanent staff in favour of contractors or temporary staff.

Table 14. *Distribution table of the trend to increase or decrease.*

Indication	Responses
Increase	77 (41)
Decrease	5 (41)
Total	82

$$\chi^2 = \infty (1.84 \times 10^{-15}); df = 1; p < 0,05.$$

A highly significant number of respondents at 5% level of confidence indicated that the phenomenon of job shift would increase.

Table 15. *Comparison of responses per occupation regarding the choice of alternative employment.*

Frequencies					
Response	Engineering	Finance	H.R.	Mining	Total
Contract services out	(3,95) 3	(4,93) 3	(8,89) 9	(9,22) 12	(20,3) 27
Apply for a permanent job	(6,29) 6	(7,86) 9	(14,15) 13	(14,65) 15	(20,5) 43
Start own business	(1,46) 3	(1,82) 1	(3,29) 5	(3,29) 1	(20,3) 10
Take up temporary employment	0	(0,18) 1	0	0	(20,5) 1
Total	12	15	27	28	81

$$\chi^2 = 0,35; df = 9; p < 0,05$$

The above finding indicates that there was no significant difference at 5% level of confidence between responses per occupation. It was anticipated that mining related occupations, which is the core business of a mining company, would prefer to remain in permanent employment. People in other occupations, which could be described as sub-servant actions to support the core business and which could be applied to any industry, would be more inclined to contract their services out or start business.

A  $\chi^2$  comparison was done on the totals in table 15 with the result:

$$\chi^2 = \infty (4.23 \times 10^{-11}); df = 3; p < 0,05.$$

This indicates that there was a highly significant difference at 5% level of confidence between the choices of alternative employment for the total sample, but as indicated above, not between occupational categories. More than 50% of respondents indicated that they would apply for an alternative permanent position.

Table 16. *Comparison of the chances of success in securing an alternative permanent position in the same or related occupation and industry.*

Frequencies					
Choice of position and industry.	Good	Poor	Very Good	Very Poor	Total
Same position and occupation	(38) 37	(28,3) 25	(10,6) 14	(5) 6	82
Related position in another industry	(38) 34	(28,3) 26	(10,6) 15	(5) 7	82
Start a business	(38) 43	(28,3) 34	(10,6) 3	(5) 2	82
Total	114	85	32	15	246

$$\chi^2 = 0,03; \text{ pf} = 6; \text{ p} = 0,05.$$

There were no significant differences at 5% level of confidence between the choice of an alternative position in the same position and occupation compared to a related position in another industry. This indicates that respondents were indifferent about the choice of an alternative position in a related position and industry.

Table 17. *Comparison of choice of occupation and industry per choice of alternative type of employment.*

Frequencies					
Choice of alternative employment	New Occupation, New Industry	New Occupation, Same Industry	Same Occupation, New Industry	Same Occupation, Same Industry	Total
Permanent job	(5,33) 4	(4,66) 5	(24,33) 23	(46) 48	82
Contract out	(5,33) 1	(4,66) 3	(24,33) 25	(46) 51	82
Temporary job	(5,33) 11	(4,66) 6	(24,33) 25	(46) 39	82
Total	16	14	73	138	246

$$\chi^2 = 0,12; df = 6; p < 0,05.$$

Results from Table 17 indicated no significant difference at 5% level of confidence between choice of occupation and industry compared with the choice of types of alternative employment. Regarding all types of alternative employment, more than 50% of the sample indicated to remain in the same occupation and industry.



Table 18. *Comparison of changes of success in same or new occupational area for occupational group.*

Frequencies			
Occupational Category	New occupational area	Same occupational area	Total
Engineering	7 (3.51)	5 (8.34)	12
Finance	5 (4.39)	9 (10.42)	14
Human Resources	9 (7.9)	18 (18,76)	27
Mining Related	3 (8,19)	25 (19,46)	28
Total	24	57	81

$$\chi^2 = 0,017; df = 3; p < 0,05.$$

Results indicated no significant difference at 5% level of confidence between occupational areas and occupational groups. Regarding the total sample, more than 70% indicated to remain in the same occupational area.

Table 19. *Distribution table of the effects on people working from home.*

Effect	Responses
Family responsibility	6 (20,5)
Financial failure	47 (20,5)
Social isolation	21 (20,5)
Status in the community	7 (20,5)
Total	82

$$\chi^2 = \infty (1,07 \times 10^{-11}); df = 3; p < 0,05.$$

Results indicated a significant difference at 5% level of confidence between the effects associated with working from home. More than 50% of respondents indicated that the fear of financial failure would affect them.

Table 20. *Distribution table of the most important stumbling blocks in starting a business.*

Effect	Responses
No clear idea for a business	44 (20,5)
No financial management knowledge	17 (20,5)
No information technology skills	2 (20,5)
No marketing skills	19 (20,5)
Total	82

$$\chi^2 = \infty (1,28 \times 10^{-9}); df = 3; \quad p < 0,05.$$

Table 20 indicates a significant difference at 5% level of confidence between the most important stumbling blocks in starting a business. More than 50% of respondents indicated that the most important stumbling block is the lack of a clear idea for a business.

Table 21. *Frequency table of a comparison of the most important skills required to be successful in an own business per occupation.*

Skills					
Occupational category	Entrepreneurial	Financial Management	Information / PC	Technical	Total
Engineering	7 (6)	3 (2,92)	0 (0,43)	2 (2,6)	12
Finance	9 (7,5)	5 (3,65)	1 (0,54)	0 (3,29)	15
Human Resources	13 (13,5)	5 (6,58)	1 (0,98)	8 (5,92)	27
Mining related	12 (14)	7 (6,82)	1 (1,02)	8 (6,14)	28
Total	41	20	3	18	82

$$\chi^2 = 0.93; df = 9; p < 0.05$$

Results from table 21 indicated no significant difference at 5% level of confidence between in the skills required to start a business per occupational category. Regarding the total sample, 50% of respondents indicated that entrepreneurial skills were the most important skill required to start a business.

Table 22. *Frequency table of a comparison of the most important skills required to be successful in contracting services out per occupation.*

Skills					
Occupation	Entrepreneurial	Financial Management	Information / PC	Technical	Total
Engineering	5 (4,53)	0 (2,63)	0 (0,87)	7 (3,95)	12
Finance	7 (5,67)	5 (3,29)	2 (1,09)	1 (4,93)	15
Human Resources	10 (10,2)	7 (5,92)	3 (1,97)	7 (8,89)	27
Mining related	9 (10,58)	6 (6,14)	1 (2,04)	12 (9,21)	28
Total	31	18	6	27	82

$$\chi^2 = 0.332; df = 9; p < 0.05$$

Results indicated no significant difference at 5% level of confidence between the skills required to contract services out per occupational category. Regarding the total sample, 37,8% of respondents indicated that entrepreneurial skills were the most important skill required to start a business. It was interesting to note that, although entrepreneurial skills were chosen by the majority of respondents, the percentage for contracting out (37,8%) was less than for starting a business. (50%)

Table 23. *Frequency table of skills necessary to be successful in own business ranked from most important (1) to least important (4)*

Skills	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Total
Entrepreneurial skills	41	12	20	8	81
Financial management skills	20	35	18	9	82
Information technology/PC skills	3	13	20	45	81
Technical skills	18	21	23	20	82
Total	83	83	84	86	326

Table 24. *Frequency table of skill necessary to be successful in contracting out services*

Skills	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Total
Entrepreneurial skills	31	19	19	12	81
Financial management skills	18	15	30	19	82
Information technology /PC skills	6	18	22	35	81
Technical skills	27	29	10	16	82
Total	83	83	84	86	326

A correlation was done between table 23 and 24 to establish whether there was a difference between the ranked skills necessary to start an own business or to contract services out. The correlation calculation returned a value of 0,448, indicating a correlation less than 50%. The significance of this correlation was that respondents indicated that the skills necessary to start a business were not the same as those necessary to contract their services out.

Table 25. *Frequency table of a comparison of the most important attributes required to be successful in an own business per occupation.*

Attributes						
Occupation	Creative Thinking	Gathering Information	Job Related Experience	Knowledge of new Technology	Risk Taking	Total
Engineering	(5,7) 6	(0,73) 4	(3,6) 2	(0,87) 0	(1,02) 0	12
Finance	(7,13) 7	(0,91) 2	(4,5) 5	(1,09) 2	(1,28) 1	15
Human Resources	(12,84) 13	(1,64) 3	(8,23) 2	(1,97) 4	(2,3) 7	27
Mining related	(13,31) 13	(1,7) 0	(8,5) 14	(2,04) 1	(2,39) 1	28
Total	39	5	25	6	27	82

$$\chi^2 = 0,108; df = 9; p < 0.05$$

The above table indicated no significant difference at 5% level of confidence between the attributes required to start a business per occupational category. Regarding the total sample, 47% of respondents indicated that creative thinking is the most important attribute required to start a business.

Table 26. *Frequency table of a comparison of the most important attributes required to be successful in contracting services out per occupation.*

Attributes						
Occupation	Creative Thinking	Gathering Information	Job Related Experience	Knowledge of new Technology	Risk Taking	Total
Engineering	(3,65) 5	(1,31) 0	(5,26) 4	(0,87) 2	(0,73) 1	12
Finance	(4,57) 4	(1,64) 0	(6,58) 7	(1,09) 1	(0,91) 2	15
Human Resources	(8,23) 10	(9,96) 3	(11,85) 9	(1,97) 3	(1,64) 2	27
Mining related	(8,53) 6	(3,07) 6	(12,29) 16	(2,04) 0	(1,7) 0	28
Total	25	9	36	6	5	82

$$\chi^2 = 0,610; df = 9; p < 0.05.$$

Results indicated no significant difference at 5% level of confidence between the attributes required to start a business per occupational category. Regarding the total sample, 43% of respondents indicated that job related experience is the most important attribute required to contract out services.

Table 27. *Frequency table of attributes necessary to be successful in an own business ranked from most important (1) to least important (5)*

Attributes	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Total
Creative thinking	39	20	14	4	3	80
Gathering information	5	14	19	29	13	80
Job related experience	25	20	9	11	17	82
Knowledge of knew technology	6	12	27	20	15	80
Risk taking	7	15	12	14	34	82
Total	83	83	84	82	87	404

Table 28. *Frequency table of attributes necessary to be successful in contracting out ranked from most important (1) to least important (5)*

Attributes	Ranked 1	Ranked 2	Ranked 3	Ranked 4	Ranked 5	Total
Creative thinking	25	21	18	12	3	79
Gathering information	9	18	16	25	11	79
Job related experience	36	13	16	7	7	79
Knowledge of new technology	6	19	17	24	15	81
Risk taking	5	8	12	12	45	82
Total	82	81	82	84	86	400

A correlation was done between the data in table 27 and 28 to establish whether there is a difference between the ranked attributes necessary to start an own business or to contract services out. The correlation calculation returned a value of 0,764, indicating a correlation higher than 50%.



Table 29. *Frequency table of the most important motivator to start an own business per occupation.*

Motivators						
Occupation	Need to be independent	Need to control own time	Need to make own decision	Opportunity to make money	Wrong Input	Total
Engineering	(3,95) 3	(0,58) 0	(0,73) 0	(6,14) 9	(0,58) 0	12
Finance	(4,93) 3	(0,73) 2	(0,91) 0	(7,68) 9	(0,73) 1	15
Human Resources	(8,89) 13	(1,31) 2	(1,64) 2	(13,82) 9	(1,31) 1	27
Mining related	(9,21) 8	(1,36) 0	(1,7) 3	(14,34) 15	(1,36) 2	28
Total	27	4	5	42	4	82

$$\chi^2 = 0.356; df = 12; p < 0,05$$

Results from table 29 indicated no significant difference at 5% level of confidence between motivators per occupational category. Regarding the total sample, more than 50% of respondents were motivated by the need to make more money.

Table 30. *Distribution table of computer skills level in various programs.*

Program	Good	Poor	Very Good	Very Poor	Total
MS Word	47	14	15	6	82
MS Excel	41	18	21	2	82
MS Outlook	52	13	14	3	82
MS Explorer	43	22	12	5	82
Total	183	67	62	16	328

Results indicated that respondents have good computer skills with 55,7% rating their skills as good.

Table 31. *Distribution table reflecting the purpose for which computers are used.*

Program	Curious to see how it works	For leisure	Private work at home	To do current job	Wrong input	Total
Personal Computer	3	2	4	73		82
Internet	3	33	10	25	11	82
E-mail	1	3	2	76		82
Total	7	38	16	174	11	246

The majority of respondents (70,3%) use computers to do their current jobs.

Table 32. *Distribution table reflecting the frequency of use of certain programs.*

Program	Con-stantly	Never	Often	Seldom	Total
E-mail	57	1	22	2	82
Internet	7	14	38	23	82
Total	64	15	60	25	164

E-mail is used by 69,5% of respondents on a constant basis. Internet is used less with 46,3% indicating that they use it often, but not constantly.

## **CHAPTER 5**

### **CONCLUSION**

The world has gone through three phases or waves of development. These waves of development were brought about by a change in the technology underlying or related to economic activity. These technological developments also changed the social complexion of society.

The third wave of development is the focus of this study, which deals with the transformation from an industrial society to the so-called 'third wave' society and economy. This transformation was brought about basically by two factors, although there were many other influences that contributed to the change. The first factor was the technological development of electronic information and communication technologies that enabled the other influences to have such a telling effect on society. The second was the globalization of the world economy that occurred as a result of the technological developments, but also as a result of political changes such as the fall of the iron curtain and subsequent economic freedom in the former Soviet Union. The Chinese economy followed the trend of being more capitalist as was illustrated by the return of the colony of Hong Kong to China.

Globalisation and the development of information technologies have had far reaching consequences on the world economy and society. A 'new wave' economy resulted where the value of companies was measured in terms of their knowledge and intellectual property.

Companies are becoming specialised, concentrating only on core business, to enable optimal penetration of the market in a specific area. As a result of specialisation, companies are contracting out non-core functions to independent contractors and as such

employing less permanent employees. This led to the phenomena of 'job shift' from permanent employment to contract and temporary employment.

Large segments of the world population are resisting globalisation and job shift, because of the subsequent losses in permanent employment and increased unemployment. Social protection for contract and temporary workers are not adequate compared to the protection for permanent employees.

South Africa, as a developing country, is not well positioned to absorb the effects of job shift. The standard of education in the country is low and as a result the majority of the population are engaged in elementary occupations. A survey was done to establish the preparedness to job-shift of middle managers in a hard rock mining company and specifically whether there was a significant difference between the preparedness for job-shift between employees engaged in mining, finance, human resources, and engineering related positions.

The majority (83%) of respondents in the sample were between 31 and 50 years of age, male dominated and more than 70% are Afrikaans speaking. The respondents are well educated with more than 80% having a tertiary education. Table 12 indicates that all occupational categories were well represented in the responses received.

The primary objective of the survey is to establish whether there is a significant difference in the preparedness of different occupational categories and the secondary objective is to look at the preparedness of all categories towards job shift.

Tables 13 and 14 indicated a highly significant level of awareness of the phenomenon of job shift and a belief that the trend will increase.

No significant differences between occupational categories could be found. The results in table 15 indicated that no significant difference exists between the responses from the various occupational categories regarding the choice of types of alternative employment. Similar results were returned from table 16 regarding the chances of success in the same or new occupational area; from table 21 regarding the most important skill necessary to be successful in an own business; from table 22 regarding the most important skill necessary to be successful in contracting services out; from table 25 regarding the most important attribute required to be successful in an own business; from table 26 regarding the most important attribute required to be successful in contracting services out; and from table 29 regarding the most important motivator to start an own business.

It must then be concluded that there were no significant difference between the preparedness for and knowledge of job shift between occupational categories.

Table 15 further indicated that although there was no significant differences between responses received per occupational category, more than 50% of respondents chose to apply for a permanent alternative position instead of contracting their services out, starting an own business or taking up temporary employment.

A preference to remain in the same occupation and industry as an alternative after job loss was observed in table 17. This is confirmed in table 18 where more than 70% of respondents indicated a preference to remain in the same occupational area.

The concept of not being employed in a permanent position, but working from home was investigated further. Table 19 indicated that more than 50% of respondents feared financial failure as a

result of working from home. The most important stumbling block in starting a business was no clear preference for a business. Table 29 indicated that the most important motivator to start a business is a desire to make more money.

The skills necessary to be successful in an own business or to contract services out were investigated in tables 21 and 22. Table 21 indicated that 50%, of respondents felt that entrepreneurial skills were most important to be successful in an own business. The low response for information technology was disappointing as it may indicate that respondents failed to see information technology as a vehicle to start a business. A correlation between tables 23 and 24 returned a value (0,448) less than 50% which indicated that respondents felt that there was a difference between the skills required to start a business compared to contracting services out.

The most important attributes required to be successful in an own business or to contract services out were shown in tables 25 and 26. Table 25 indicated that 47% of respondents felt that creative thinking was the most important attribute required to start an own business. Job related experience was preferred by 43% of respondents in table 26, as the attribute required to be successful in contracting services out.

Although respondents were aware of job shift and were generally of the opinion that it would increase, only a small portion indicated that they were ready or willing to venture out of the known into fields away from their current occupations. Entrepreneurial skills were seen as the most important skill needed for a non-permanent job, but the low responses on Computer skills must indicate that respondents do not realise the important role that these technologies can play in a shift from permanent to non-permanent employment.

Respondents indicated that creative thinking was an important attribute in their current positions as well as to start an own business, but cited no clear preference for an own business as the most important stumbling block in starting an own business. Job related experience was cited as most important to contract services out, which confirms a desire to remain with the known and the associated comfort zone. An attribute such as gathering information, which is a method to get an idea for a possible business, was rated very low. The attribute of risk taking was cited as least important, although it is one of the most important attributes for an entrepreneur.

In order to put the survey in perspective, it would be interesting to predict the effect that a retrenchment exercise or a decision to outsource non-core activities in the industry would have on the respondents. The majority of respondents will actively try to secure another permanent job in the same occupation and same industry or at least a related occupation in a related industry. Shock would follow if it were found that there were a limited number of permanent jobs available in the industry.

Underdeveloped attributes such as creative thinking, knowledge of new technology, the gathering of information and risk taking would then be necessary to create self employment.

Companies in South Africa are thus encouraged to provide extensive counseling and vocational training to employees well before actual retrenchment.

It may assist in the long term to familiarise current employees with the attributes of an entrepreneur as it would move the company towards a 'third wave' organization and increase outputs. This would also lessen the effects of future job losses. The attributes are creative thinking, gathering of additional information



and ideas, continuous increase of knowledge of new technology, and taking calculated risks.

Tables 30 indicated that more than 50% of respondents regard their computer skills as good and used in their daily activities. The company has thus moved far in providing Middle Managers with technology and training. The technology is used in daily activities. However, it is alarming to note in Table 31 that only 6,5% of respondents used computers for private work at home. Table 32 indicates that the use of the Internet for work or other applications was limited.

The problem with job shift and globalisation is not whether it will happen, but rather how soon it will happen and how society will cope with it.

The developed world and, to a lesser extent the developing world, is already totally dependant on electronic information and communication technology to do business. It is inconceivable to imagine a world without computers, even in the day-to-day activities of the population. New technology will be developed to iron out any existing problems and risks in the same way that flying was made more safe, accessible and cheaper after the first flight of the Wright brothers on Kitty Hawk Beach in 1901. The pace of development will just be so much faster.

Job-shift is largely a function of the development of information technology and globalisation and it would be impossible to stop the process. The challenge is for governments, companies, enterprises and the individuals themselves to devise creative measures to address increasing unemployment and poverty that may result from job shift. This can be done by means of trade concessions by the governments of developed countries to developing countries, but also for developing countries to accept

the challenge and responsibility to use globalization and technology for the good of their citizens.

In conclusion, the hypothesis that was distilled in chapter one was rejected, as it was found that there is not a significant difference between the awareness of and preparedness for job-shift between the incumbent of various occupational areas in the mining industry.

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## **Annexure A**

### Introductory memorandum and Questionnaire

Dear colleague, this is a survey for my Master's degree in Industrial Relations and it would be appreciated if you could take some time to complete it by typing an 'x' in the middle column and send it back by E-mail by 2 August 2001. Please use "Forward" when E-mailing the questionnaire back to include the attachment. Should you wish to remain anonymous, please print it out and send it back with the internal mail.

Please note that this survey is not by Impala Platinum Management, but a private survey for myself. I do however have permission from Impala Management to do the survey.

The purpose of my study is to investigate the influence of "job shift" on Middle Managers. The term "job shift" refers to the modern trend where Companies worldwide prefer to outsource non-core business activities to independent contractors or to employ temporary employees to perform specialized functions. The purpose of the study is to measure the adaptability of South African Managers to this phenomenon.

Your responses will be treated as confidential.

Thank you for your time and effort.

Johan Labuschagne  
Human Resources Manager: Industrial Relations, Impala South.

**Annexure B****QUESTIONNAIRE**

## 1. Age

18 - 24		01
25 - 30		02
31 - 40		03
40 - 50		04
51 +		05

## 2. Gender

Male		06
Female		07

## 3. Highest Qualifications

Std 8		08
Std 9 - 10		09
Technikon diploma		10
University degree		11

## 4. Home Language

English		12
Afrikaans		13
Tswana		14
Other		15

## 5. Occupation

Mining related		16
Human Resources		17
Finance		18
Engineering		19

6. Are you aware that some Companies are reducing the number of permanent staff in favour of contractors or temporary staff?

Yes		20
No		21

7. Do you think this trend will increase or decrease?

Increase		22
Decrease		23

8. Do you know anybody in your occupational category whose job has become redundant?

Yes		24
No		25

9. What do people in your occupational category usually do if their jobs became redundant?

Look for another permanent job		26
Start a small business of their own		27
Contract their services out?		28
Take up temporary employment?		29

10. What do you think are the chances for a person in your occupational category whose job has become redundant of finding another permanent job in the same position and occupation?

Very good		30
Good		31
Poor		32
Very poor		33

11. What do you think are the chances for a person in your occupational category whose job has become redundant of finding another permanent job in a related position in another industry?

Very good		34
Good		35
Poor		36
Very poor		37



12. Should a person decide to start a business, what is his/her chance of success?

Very good		38
Good		39
Poor		40
Very poor		41

13. People in your occupational category whose jobs have become redundant will have the best chance to secure a permanent job if they apply for a position:

In the same occupation, in the same Industry		42
In the same occupation, in a new Industry		43
In a new occupation, in the same Industry		44
In a new occupation, in a new Industry		45

14. People in your occupational category whose jobs have become redundant will have the best chance to contract out their services if they advertise:

For the same occupation, in the same Industry		46
For the same occupation, in a new Industry		47
For a new occupation, in the same Industry		48
For a new occupation, in a new Industry		49

15. People in your occupational category whose jobs have become redundant will have the best chance to secure a temporary job if they apply for a position:

In the same occupation, in the same Industry		50
In the same occupation, in a new Industry		51
In a new occupation, in the same Industry		52
In a new occupation, in a new Industry		53

16. People in your occupational category whose jobs have become redundant will have the best chance to be successful in a business venture if the business is:

In the same occupational area, e.g. mining		54
In a new occupational area, e.g. construction		55

17. Which of the following will have the most serious effect on a person who works from home?

Social isolation, e.g. no social contact during the day		56
Status in the Community, e.g. living without an association with a company		57
Financial failure, e.g. unable to provide for the family financially		58
Family responsibility, e.g. children unable to cope with a parent without a permanent job		59

18. What do you think is the most important stumbling block in starting a business of your own?

No marketing skills		60
No financial management knowledge		61
No Information Technology skills		62
No clear idea for an own business		63

19. Do you feel that people in your occupational category needs additional skills to operate successfully as a contractor or to start an own business?

Yes		64
No		65

20. Which of the following skills are most important in your current job?

Technical skills		66
Entrepreneurial skills		67
Information Technology /PC skills		68
Financial Management skills		69

21. Rank the following skills from most important (1) to least important (4) to be successful in a business of your own?

Technical skills		70
Entrepreneurial skills		71
Information Technology /PC skills		72
Financial Management skills		73

22. Rank the following skills from most important (1) to least important (4) to be successful in contracting out your services?

Technical skills		74
Entrepreneurial skills		75
Information Technology /PC skills		76
Financial Management skills		77

23. Which of the following attributes are most important in your current job?

Creative thinking		78
Risk taking		79
Gathering information		80
Knowledge of new technology		81

24. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?

Creative thinking		82
Risk taking		83
Gathering information		84
Knowledge of new technology		85
Job related experience		86

25. Rank the following attributes from most important (1) to least important (5) to be successful in contracting out your services?

Creative thinking		87
Risk taking		88
Gathering information		89
Knowledge of new technology		90
Job related experience		91

26. Which of the following is the most important motivator for a person to start an own business?

Need to be independence		92
Need to control own time		93
Opportunity to make money		94
Need to make own decisions		95

27. How would you rate your skills/knowledge of Microsoft Word?

Very good		96
Good		97
Poor		98
Very poor		99

28. How would you rate your skills/knowledge of Microsoft Excel Worksheet?

Very good		100
Good		101
Poor		102
Very poor		103

29. How would you rate your skills/knowledge of Microsoft Outlook or any other E-mail program?

Very good		104
Good		105
Poor		106
Very poor		107

30. How would you rate your skills/knowledge of Microsoft Internet Explorer or any other Internet Browser?

Very good		108
Good		109
Poor		110
Very poor		111

31. For which purpose do you mostly use a Computer?

For leisure		112
To do your current job		113
Private work at home		114
Curious to see how it works		115

32. How often do you use the Internet?

Never		116
Seldom		117
Often		118
Constantly		119

33. For what purpose do you mostly use the Internet?

For leisure		120
To do your current job		121
Private work at home		122
Curious to see how it works		123

34. How often do you use E-mail?

Never		124
Seldom		125
Often		126
Constantly		127

35. For what purpose do you mostly use E-mail?

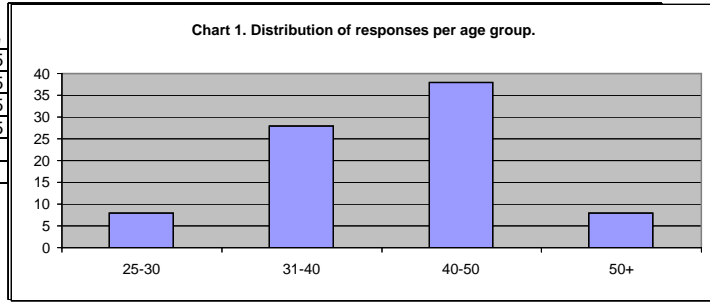
For leisure		128
To do your current job		129
Private work at home		130
Curious to see how it works		131

After you have completed all the questions, click on 'file' (top left of screen), click on 'send to', click on 'Mail Recipient', Select Johan Labuschagne from the address book and send.

Thank you for your time!

**Question 1. Age**

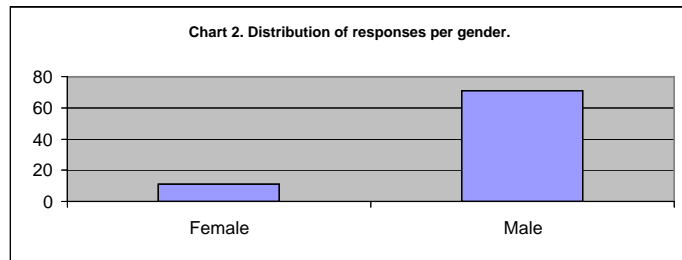
	Actual	Average
25-30	8	20.5
31-40	28	20.5
40-50	38	20.5
50+	8	20.5
(blank)		
Grand Total	82	
Average		20.5



The age profile indicates a 'mature' sample with 60% of the respondents between 40 and 50 years and 23% between 31 and 40%.

**Question 2. Gender**

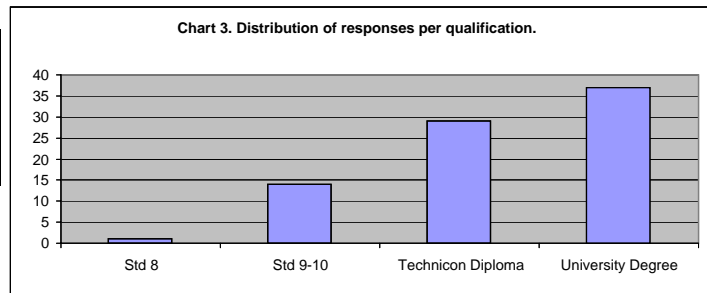
	Actual	Average
Female	11	41
Male	71	41
(blank)		
Grand Total	82	
Average		41



The response from females was low with 13,4% of the respondents compared with 86,4% from males. This indicates that the mining industry are still male dominated .

**Question3. Highest Qualification**

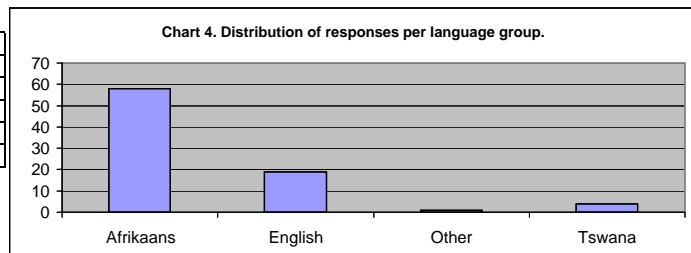
	Actual	Average
Std 8	1	16.4
Std 9-10	14	16.4
Technicon Diploma	29	16.4
University Degree	37	16.4
Wrong Input	1	
(blank)		
Grand Total	82	
Average		16.4



Results indicates that 80,5% of respondents have a tertiary education.

**Question 4. Home language**

	Actual	Average
Afrikaans	58	20.5
English	19	20.5
Other	1	20.5
Tswana	4	20.5
(blank)		
Grand Total	82	
Average		20.5



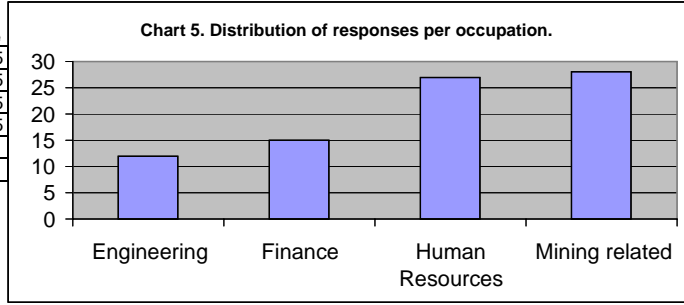
Afrikaans is the dominant language group with 70,7% afrikaans speaking and 23,1% English. The other language groups are poorly represented.

**Question 5. Occupation**

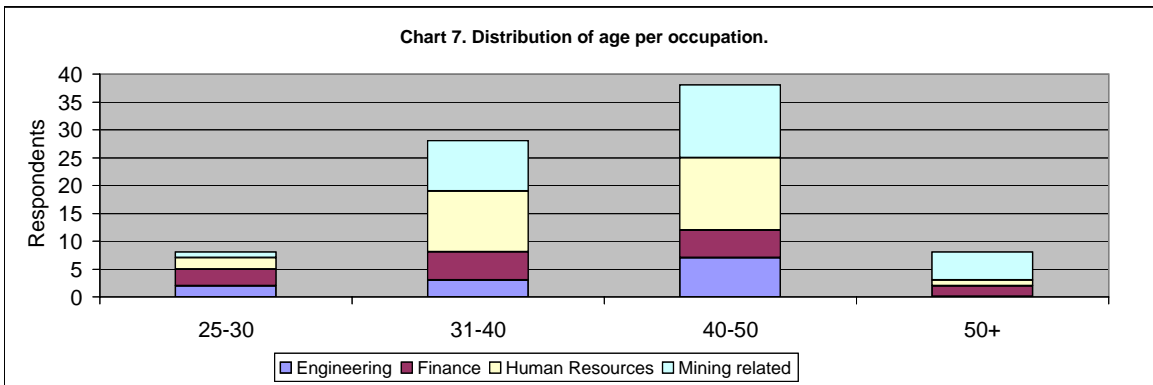
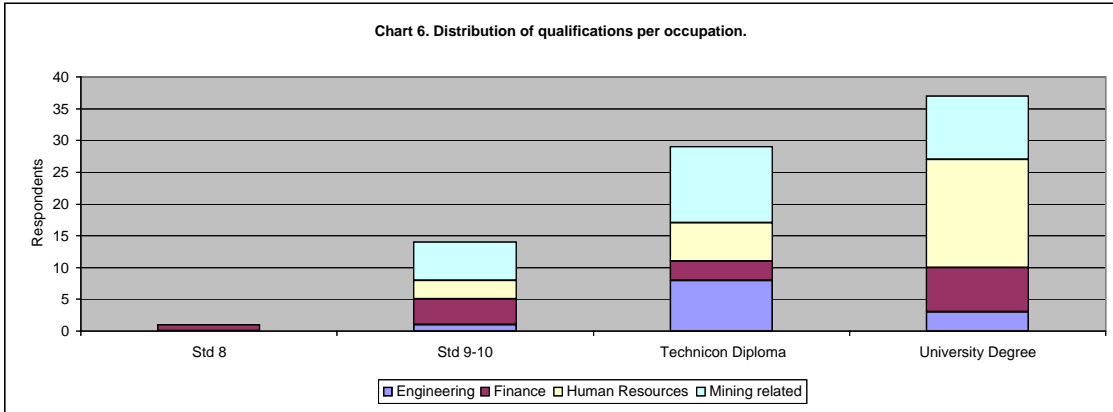
	Actual	Average
Engineering	12	20.5
Finance	15	20.5
Human Resources	27	20.5
Mining related	28	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 0.0202997



The hypothesis that there were no significant differences between the responses per occupation was rejected with a chi value of 0,0203%.

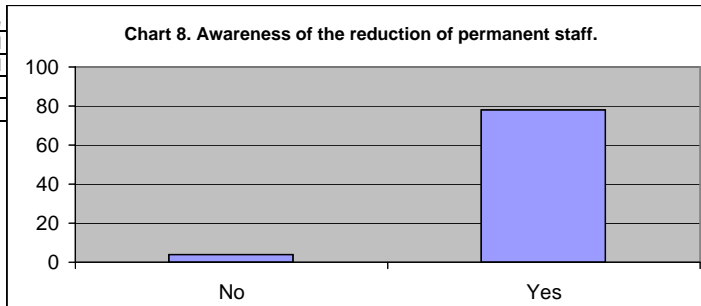


**Question 6. Are you aware that some Companies are reducing the number of permanent staff in favour of contractors or temporary staff?**

	Actual	Average
No	4	41
Yes	78	41
(blank)		
Grand Total	82	

Average 41

H0 rejected with a chi value of 3.035E-16

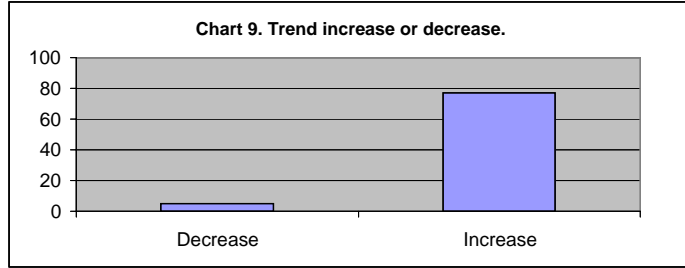


The majority of respondents (95,1%) were aware that Companies were reducing permanent staff.

**Question 7. Do you think this trend will increase or decrease?**

	Actual	Average
Decrease	5	41
Increase	77	41
(blank)		
Grand Total	82	

Average 41  
 H0 rejected with a chi value of 1.849E-15

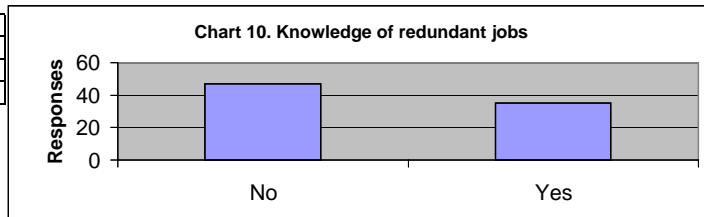


The majority of respondents indicated that the trend will increase.

**Question 8. Do you know anybody in your occupational category whose job has become redundant?**

	Actual	Average
No	47	41
Yes	35	41
(blank)		
Grand Total	82	

Average 41  
 H0 accepted with a chi value of 0.1851121

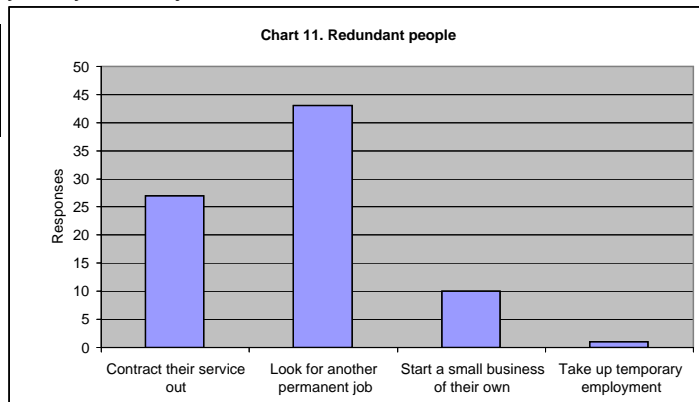


The majority of respondents indicated that they do not know anybody whose job became redundant, but H0 was rejected with a chi-value of 0,185%. This is an indication that there was no retrenchments in the Platinum industry for a number of years.

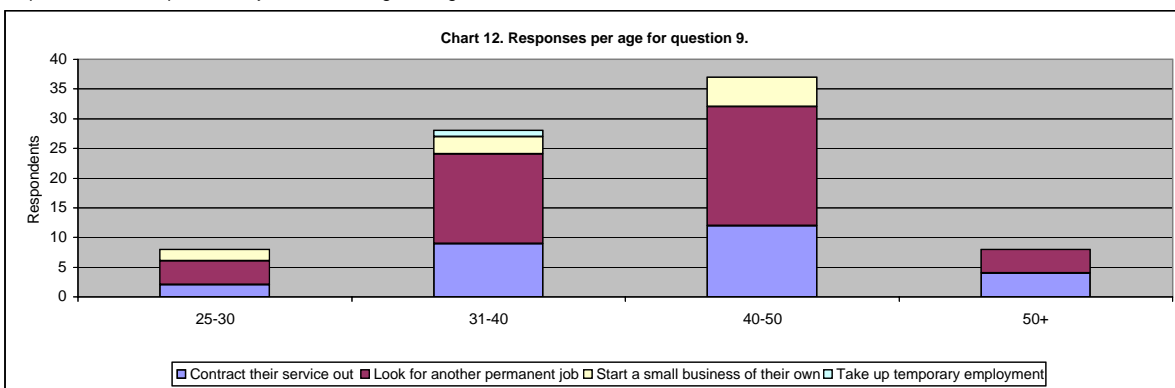
**Question 9. What do people in your occupational category usually do if their job has become redundant?**

	Actual	Average
Contract their service out	27	20.25
Look for another permanent job	43	20.25
Start a small business of their own	10	20.25
Take up temporary employment	1	20.25
Wrong Input	1	

Average 20.25  
 H0 rejected with a chi value of 4.23E-11



A chi-test indicated that there was a significant difference between the options with a value of 4,23-11. However, 52,4% opted to look for another permanent job and 32,9% to contract their services out. In an attempt to identify the group who opted to look for a permanent job, the following investigations were done:

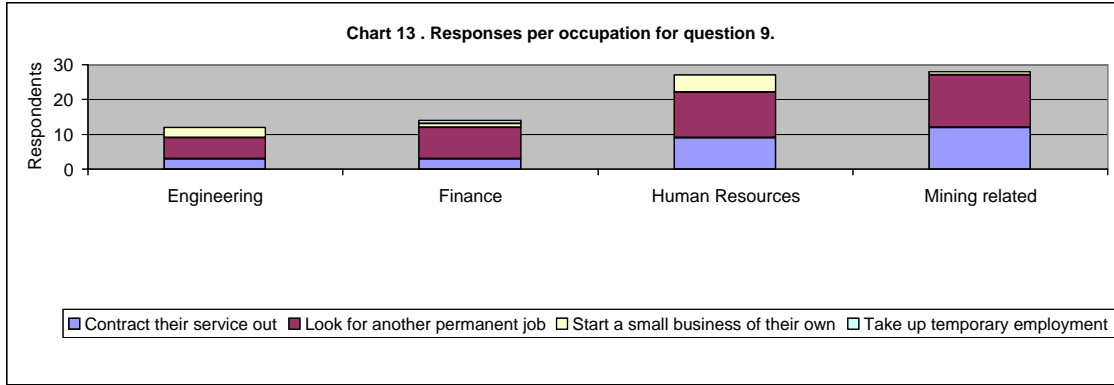




A chi-test was done to determine whether there was a significant difference between the options in question 9 per age. The chi-test returned a value of 0,913%, indicating that there was no significant difference between the responses per age group. The same test was repeated for qualification, gender, language and occupation. In all cases, the chi-test indicated that there was no significant difference between the responses per grouping with the following values:

Per qualification, rejected with a value of 0,92%;  
 per gender, rejected with a value of 0,28%;  
 per language, rejected with a value of 0,68%; and  
 per occupation, rejected with a value of 0,35%.

No clear indication could thus be found to indicate that any particular group favour any specific option given in question 9. In a further attempt to identify the group most likely to look for a permanent position, the correlations between groupings was calculated.



Eng	Fin	Correlation	0.97
HR	MR	Correlation	0.949
Eng	HR	Correlation	0.866
Eng	MR	Correlation	0.665
Fin	HR	Correlation	0.96
Fin	MR	Correlation	0.825

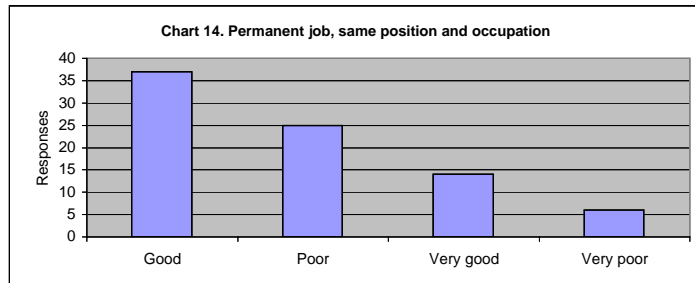
The correlation calculations confirmed the results from the chi-test that there is no difference between the options chosen by the various groupings.

**Question 10. What do you think are the chances for a person in your occupational category whose job has become redundant of finding another permanent job in the same position and occupation?**

	Actual	Average
Good	37	20.5
Poor	25	20.5
Very good	14	20.5
Very poor	6	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 7.192E-06



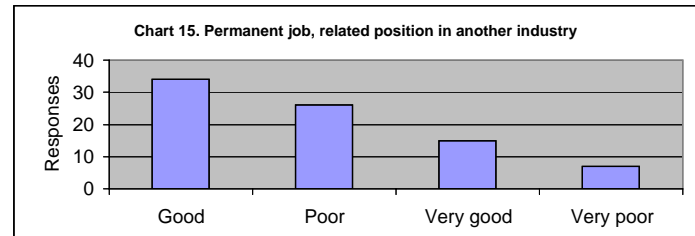
H0 was rejected with a chi value of 7,19E-06. The majority of respondents (62%) felt that the chances of finding a permanent job was good.

**Question 11. What do you think are the chances for a person in your occupational category whose job has become redundant of finding another permanent job in a related position in another industry?**

	Actual	Average
Good	34	20.5
Poor	26	20.5
Very good	15	20.5
Very poor	7	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 0.0001197



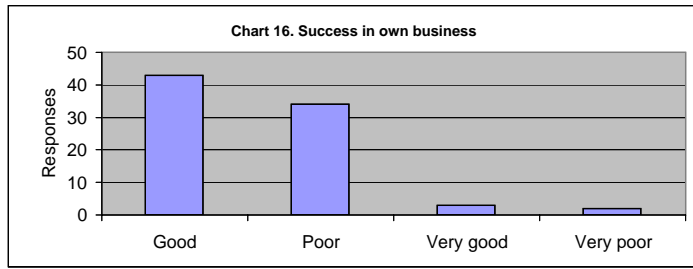
Correlation of responses from questions 10 and 11: 0.995274  
 This correlation indicates that the respondents are indifferent regarding a permanent job in the same occupation and industry or in a related position in another industry.

**Question 12. Should a person decide to start a business, what is his/her chances of success?**

Good	43
Poor	34
Very good	3
Very poor	2
(blank)	
Grand Total	82

Average 20.5

H0 rejected with a chi value of 4.502E-14



Only 12% of respondents opted to start an own business in question 9, which reduced the value of this question.

Comparison of the chances of success in securing an alternative permanent position in the same or related occupation or industry.

	Good	Poor	V Good	V Poor	Total
Same position and occup	37	25	14	6	82
Related position in another ind.	34	26	15	7	82
Start a business	43	34	3	2	82
Total	114	85	32	15	246

Expected values for chitest

	Good	Poor	V Good	V Poor	Total
Same position and occup	38	28.33	10.66667	5	82
Related position in another ind.	38	28.3	10.6666	5	82
Start a business	38	28.3	10.6666	5	82
Total	114	85	32	15	246

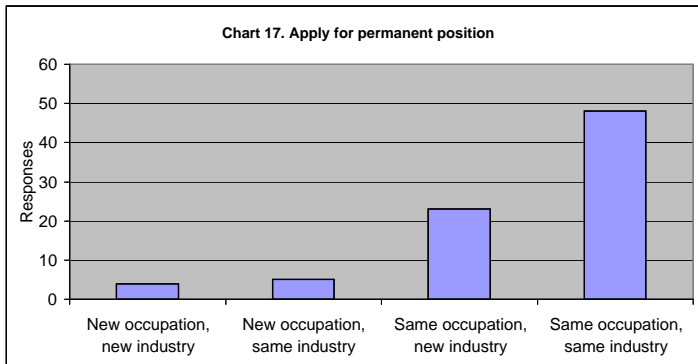
Chitest 0.0302577

**Question 13. People in your occupational category whose jobs have become redundant will have the best chance to secure a permanent job if they apply for a position:**

	Actual	Average
New occupation, new industry	4	20
New occupation, same industry	5	20
Same occupation, new industry	23	20
Same occupation, same industry	48	20
Wrong Input	2	
(blank)		
Grand Total	82	

Average 20

H0 rejected with a chi value of 9.515E-14

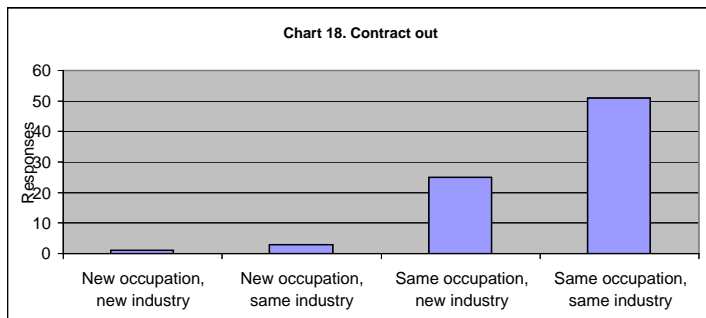


**Question 14. People in your occupational category whose jobs have become redundant will have the best chance to contract out their services if they advertise:**

	Actual	Average
New occupation, new industry	1	20
New occupation, same industry	3	20
Same occupation, new industry	25	20
Same occupation, same industry	51	20
Wrong Input	2	
(blank)		
Grand Total	82	

Average 20

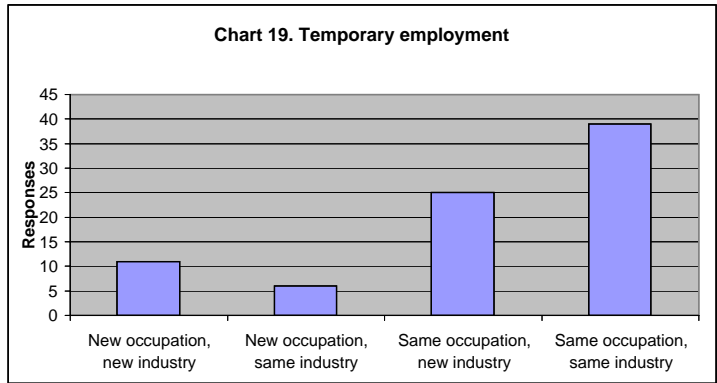
H0 rejected with a chi value of 1.262E-17



**Question 15. People in your occupational category whose jobs have become redundant will have the best chance to secure a temporary job if they apply for a position:**

	Actual	Average
New occupation, new industry	11	20.25
New occupation, same industry	6	20.25
Same occupation, new industry	25	20.25
Same occupation, same industry	39	20.25
Wrong Input (blank)	1	
Grand Total	82	

Average 20.25  
 H0 rejected with a chi value of 3.675E-07



The responses to questions 13, 14, and 15 confirmed the conclusion found in question 9 that the respondents would opt for an activity related to their present occupation.

Comparison of choices of occupation and industry per occupational group.

	New Occ		Same occ		Total
	New Ind	Same Ind	New Ind	Same Ind	
Perm job	4	5	23	48	82
Contract out	1	3	25	51	82
Temporary job	11	6	25	39	82
Total	16	14	73	138	246

Expected values for chi

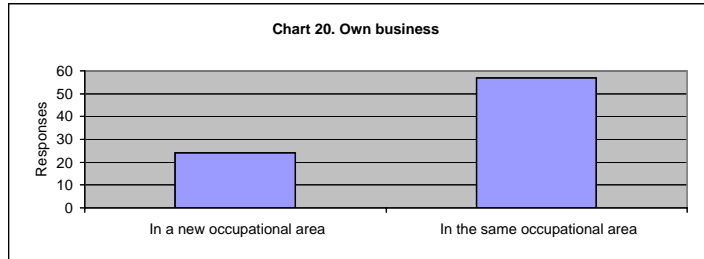
	New Occ		Same occ		Total
	New Ind	Same Ind	New Ind	Same Ind	
Perm job	5.3333333	4.6666667	24.33333	46	82
Contract out	5.3333333	4.66666	24.33333	46	82
Temporary job	5.3333333	4.66666	24.33333	46	82
Total	16	14	73	138	246

Chi test 0.1233351

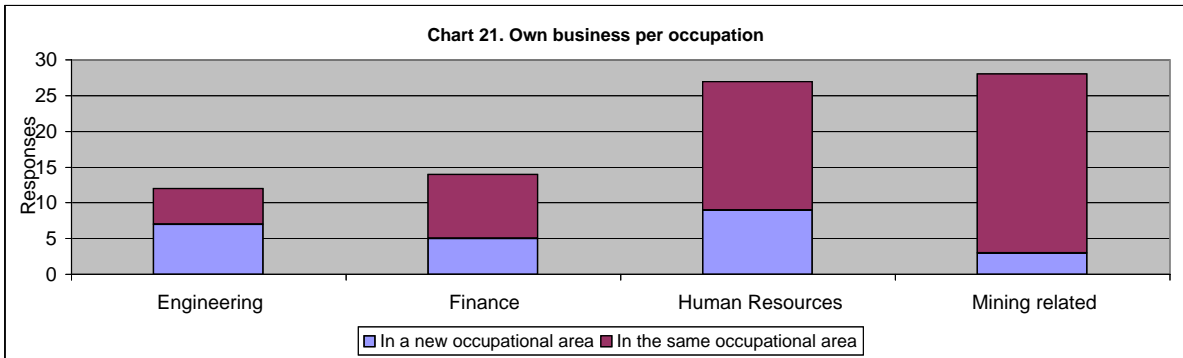
**Question 16. People in your occupational category whose jobs have become redundant will have the best chance to be successful in a business venture if the business is:**

	Actual	Average
In a new occupational area	24	40.5
In the same occupational area	57	40.5
Wrong Input (blank)	1	
Grand Total	82	

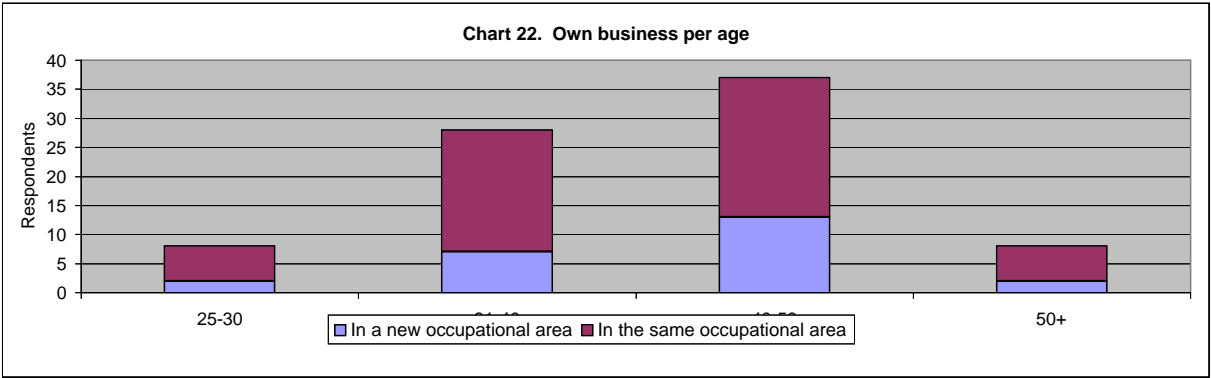
Average 40.5  
 H0 rejected with a chi value of 0.0002457



The value for the chi-test of 0,000246 indicates a significant difference between the responses and further attempts were made to identify which grouping opted for the same or new occupational area.



A chi-test done to determine whether there was a significant difference between the options for question 16 per occupation. The chi-test returned a value of 0,017 indicating a significant difference between responses from the various occupations. The response from Engineering was an exception as the majority opted for a business in a new occupational area. A chi-test was done to establish whether there was a significant difference between the responses from Engineering. The test returned a value of 0,563% indicating that there was no significant difference between the responses from Engineering.

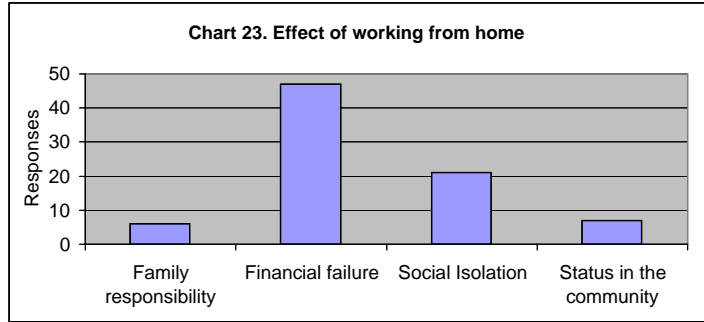


A chi-test done to determine whether there was a significant difference between the options for question 16 per age. The chi-test returned a value of 0,8% indicating no significant difference between responses from the various age groups.

**Question 17. Which of the following will have the most serious effect on a person who works from home?**

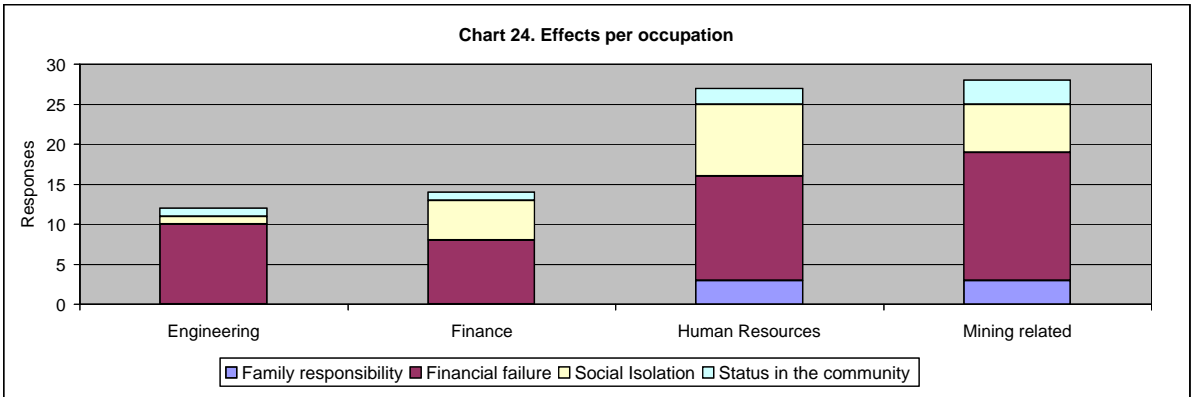
	Actual	Average
Family responsibility	6	20.25
Financial failure	47	20.25
Social Isolation	21	20.3
Status in the community	7	20.3
Wrong Input (blank)	1	
Grand Total	82	

Average 20.25  
 H0 rejected with a chi value of 1.067E-11



H0 was rejected with a value of 1,07E-11.

A chi-test was done to determine whether there was a significant difference between responses per occupation.



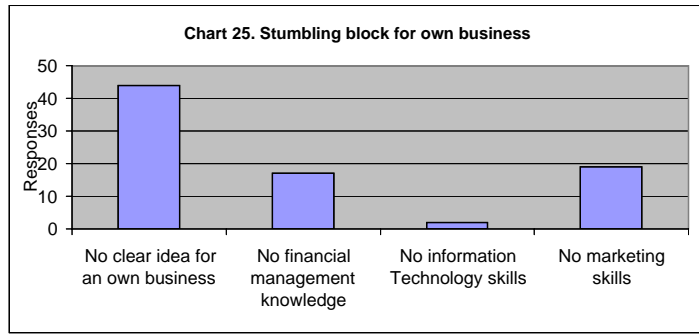
H0 was rejected with a value of 0,77% indicating that there were no significant difference between responses per occupation.

**Question 18. What do you think is the most important stumbling block in starting a business of your own?**

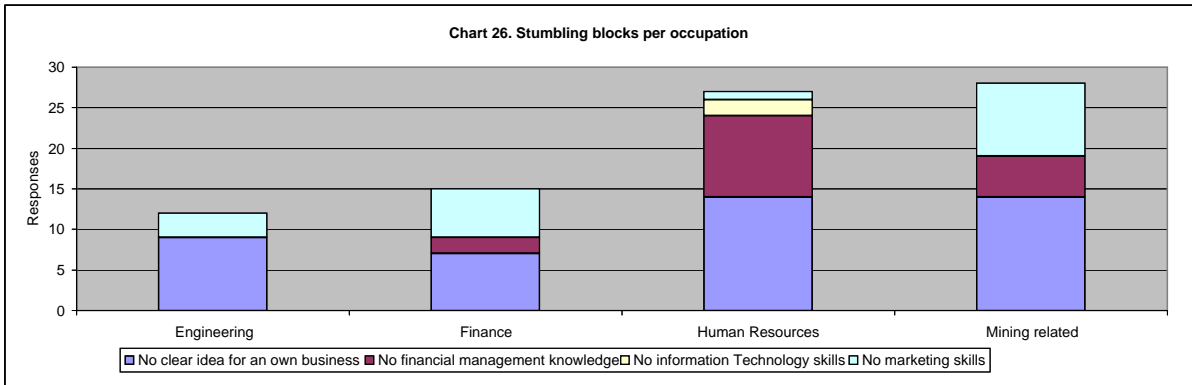
	Actual	Average
No clear idea for an own business	44	20.5
No financial management knowledge	17	20.5
No information Technology skills	2	20.5
No marketing skills	19	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 1.277E-09



H0 was rejected with a value of 1,28E-09, but a test to determine the differences between responses per occupation, indicated with a value of 0,77% that there were no significant difference between the responses.



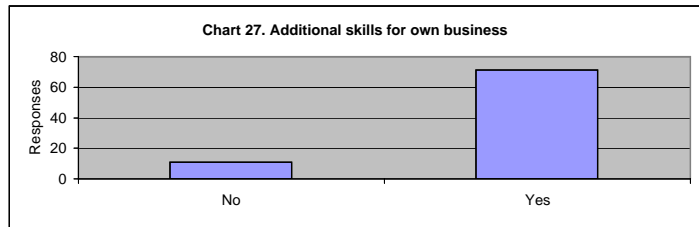
No clear idea for an own business was the majority response with no significant difference between occupations.

**Question 19. Do you feel that people in your occupational category needs additional skills to operate successfully as a contractor or to start an own business?**

	Actual	Average
No	11	41
Yes	71	41
(blank)		
Grand Total	82	

Average 41

H0 rejected with a chi value of 3.452E-11

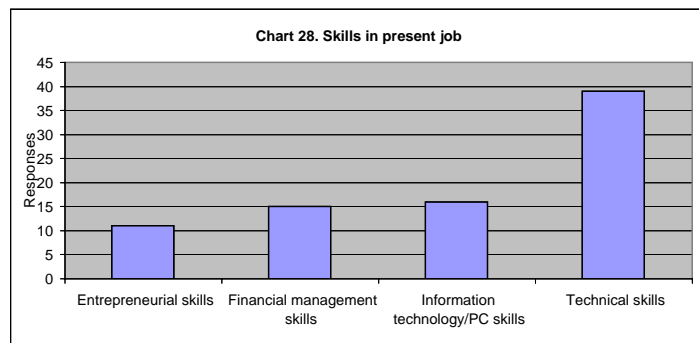


**Question 20. Which of the following skills are most important in your current job?**

	Actual	Average
Entrepreneurial skills	11	20.25
Financial management skills	15	20.25
Information technology/PC skills	16	20.25
Technical skills	39	20.25
Wrong Input	1	
(blank)		
Grand Total	82	

Average 20.25

H0 rejected with a chi value of 2.698E-05



A significant majority (chi value 2,7E-5) that technical skills are required to be successful in their current job.

**Question 21.1. Rank the following skills from most important (1) to least important (4) to be successful in a business of your own?**

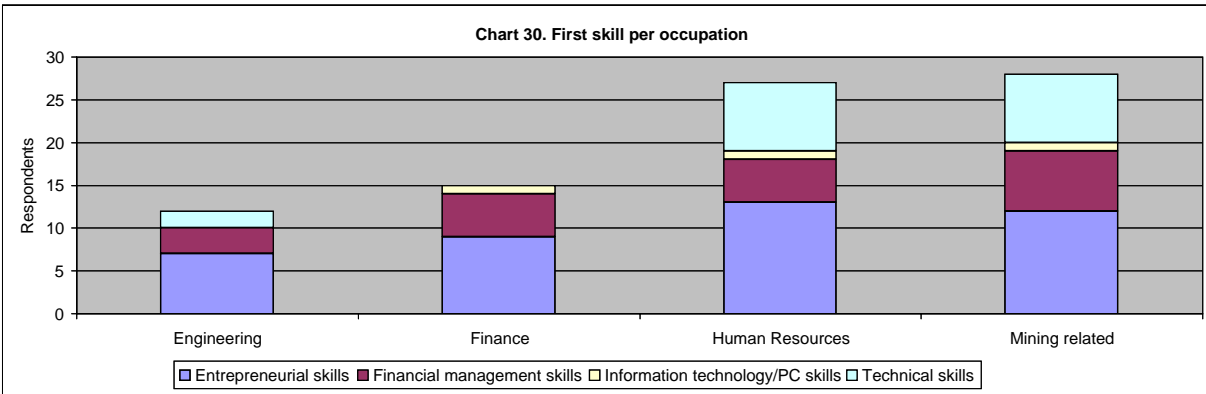
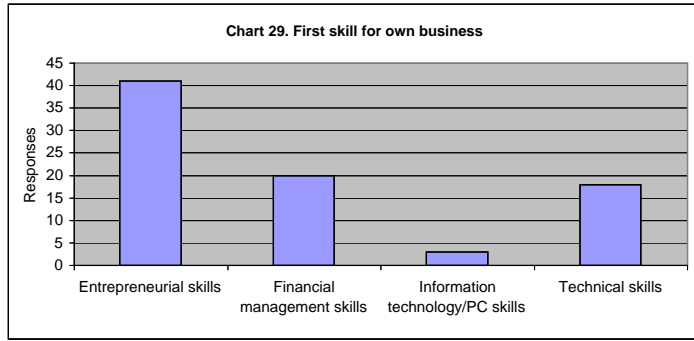
Ranked 1

	Actual	Average
Entrepreneurial skills	41	20.5
Financial management skills	20	20.5
Information technology/PC skills	3	20.5
Technical skills	18	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 8.432E-08

The responses per occupation was examined.



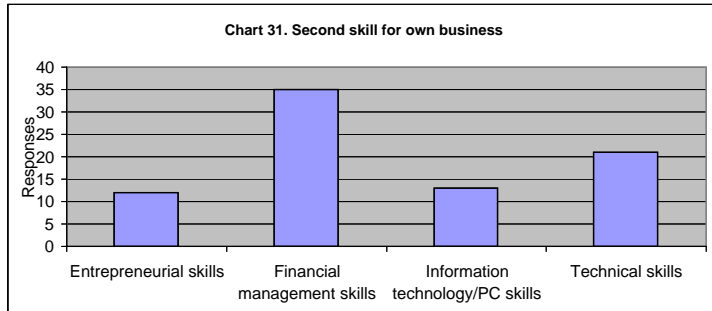
**Question 21.2. Rank the following skills from most important (1) to least important (4) to be successful in a business of your own?**

Ranked 2

	Actual	Average
Entrepreneurial skills	12	20.25
Financial management skills	35	20.25
Information technology/PC skills	13	20.25
Technical skills	21	20.25
Wrong Input	1	
(blank)		
Grand Total	82	

Average 20.25

H0 rejected with a chi value of 0.0008037



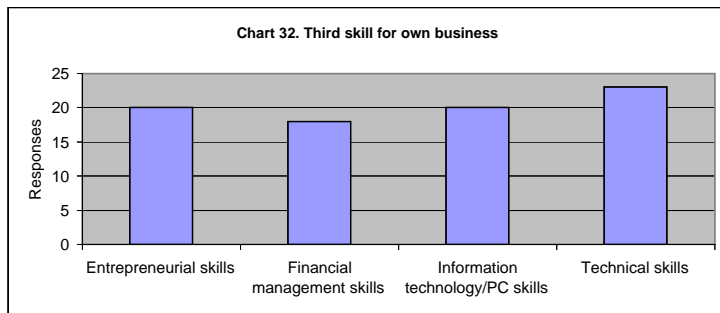
**Question 21.3. Rank the following skills from most important (1) to least important (4) to be successful in a business of your own?**

Ranked 3

	Actual	Average
Entrepreneurial skills	20	20.25
Financial management skills	18	20.25
Information technology/PC skills	20	20.25
Technical skills	23	20.25
Wrong Input	1	
(blank)		
Grand Total	82	

Average 20.25

H0 accepted with a chi value of 0.8896171



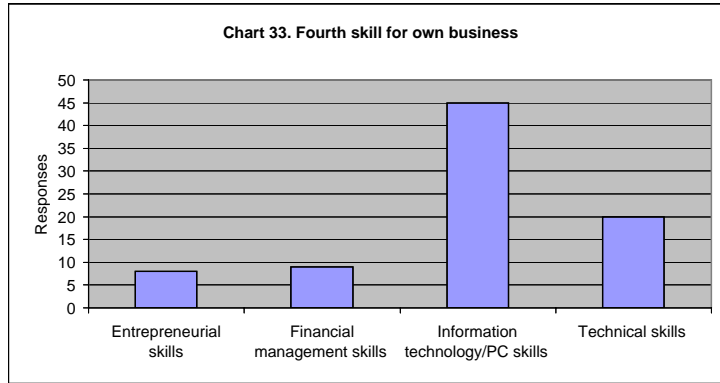
**Question 21.4. Rank the following skills from most important (1) to least important (4) to be successful in a business of your own?**

Ranked 4

	Actual	Average
Entrepreneurial skills	8	20.5
Financial management skills	9	20.5
Information technology/PC skills	45	20.5
Technical skills	20	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 2.07E-09



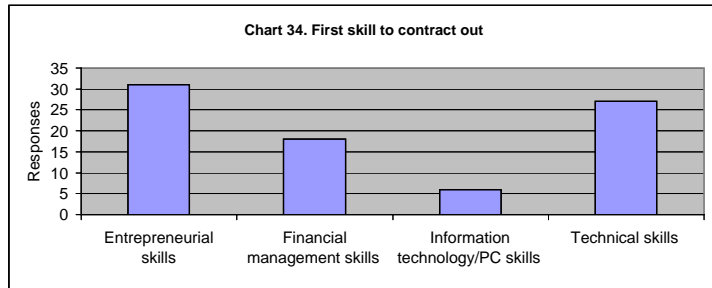
**Question 22.1. Rank the following skills from most important (1) to least important (4) to be successful in contracting out your services?**

Ranked 1

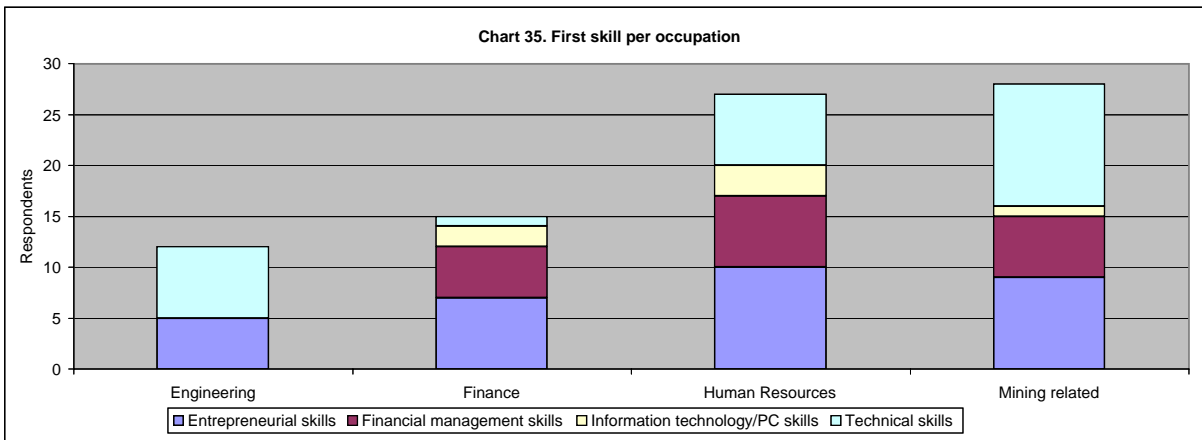
	Actual	Average
Entrepreneurial skills	31	20.5
Financial management skills	18	20.5
Information technology/PC skills	6	20.5
Technical skills	27	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 0.0004398



H0 was rejected with a chi value of 0,00044. The responses per occupation was examined.



H0 was accepted with a chi value of 0,33% indicating that there was no significant difference between the responses per occupation.

The responses for question 21.1 and 22.1 have a correlation of 0,87, but there is not a significant difference between the two questions with a chi value of 0,047%.

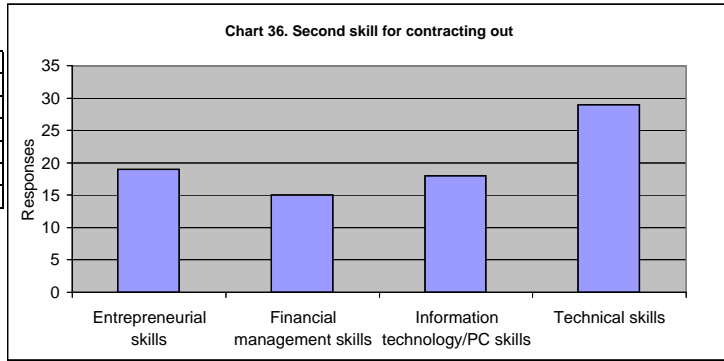
**Question 22.2. Rank the following skills from most important (1) to least important (4) to be successful in contracting out your services?**

Ranked 2

	Actual	Average
Entrepreneurial skills	19	20.25
Financial management skills	15	20.25
Information technology/PC skills	18	20.25
Technical skills	29	20.25
Wrong Input (blank)	1	
Grand Total	82	

Average 20.25

H0 accepted with a chi value of 0.1452444



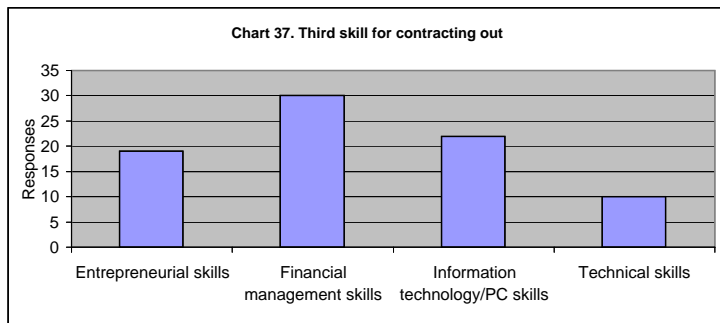
**Question 22.3. Rank the following skills from most important (1) to least important (4) to be successful in contracting out your services?**

Ranked 3

	Actual	Average
Entrepreneurial skills	19	20.25
Financial management skills	30	20.25
Information technology/PC skills	22	20.25
Technical skills	10	20.25
Wrong Input (blank)	1	
Grand Total	82	

Average 20.25

H0 accepted with a chi value of 0.0182797



**Question 22.4. Rank the following skills from most important (1) to least important (4) to be successful in contracting out your services?**

Ranked 4

	Actual	Average
Entrepreneurial skills	12	20.5
Financial management skills	19	20.5
Information technology/PC skills	35	20.5
Technical skills	16	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 0.0019239

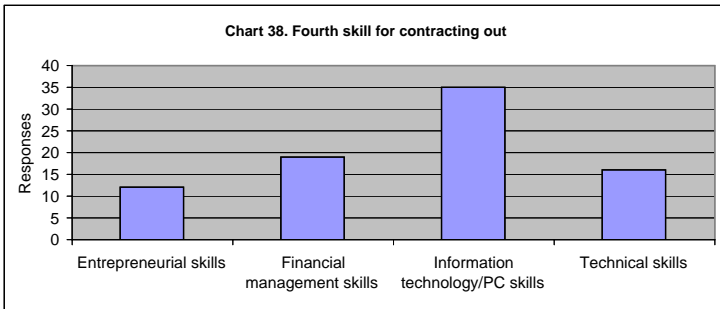


Table of skills necessary for own business ranked from 1 to 4.

	Ranked 1	2	3	4
Entrepreneurial skills	14	12	20	8
Financial management skills	20	35	18	9
Information technology/PC skills	3	13	20	45
Technical skills	18	21	23	20

Table of skills necessary for contracting out ranked from from 1 to 4.

	Ranked 1	2	3	4
Entrepreneurial skills	31	19	19	12
Financial management skills	18	15	30	19
Information technology/PC skills	6	18	22	35
Technical skills	27	29	10	16

Correlation 0.4481305

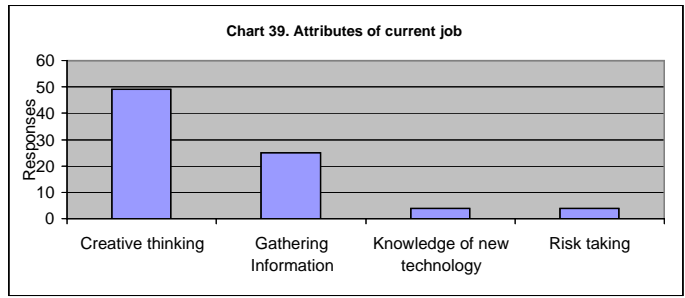


**Question 23. Which of the following attributes are most important in your current job?**

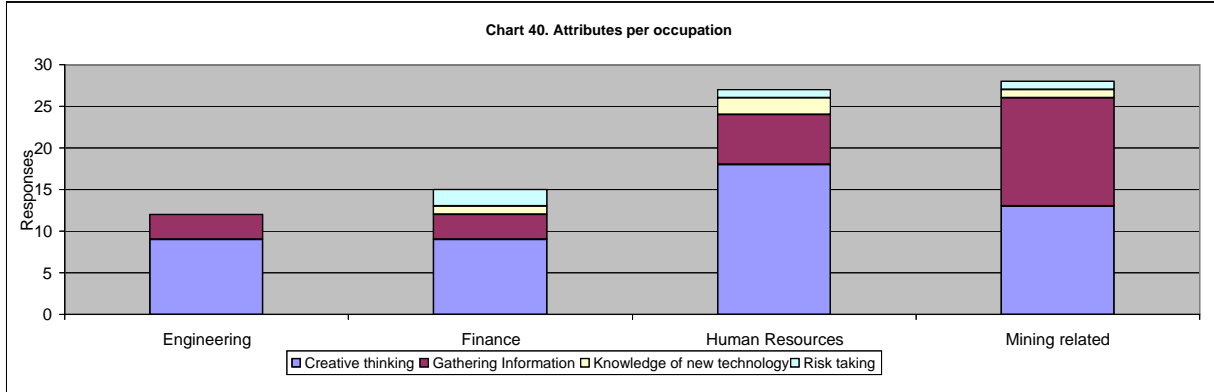
	Actual	Average
Creative thinking	49	20.5
Gathering Information	25	20.5
Knowledge of new technology	4	20.5
Risk taking	4	20.5
(blank)		
Grand Total	82	

Average 20.5

H0 rejected with a chi value of 1.722E-14



An analyses of the responses per occupation indicated that there was no significant difference between the responses per occupation with a chi value of 0,53%, as indicated below.



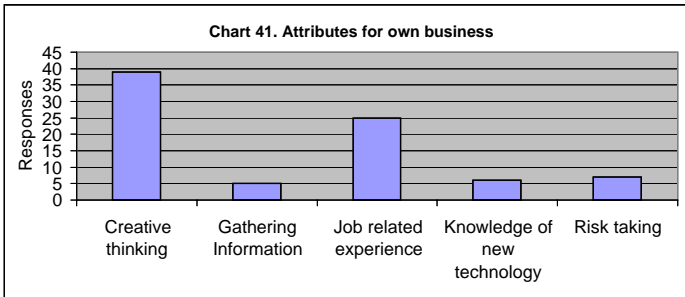
**Question 24.1. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?**

Ranked 1

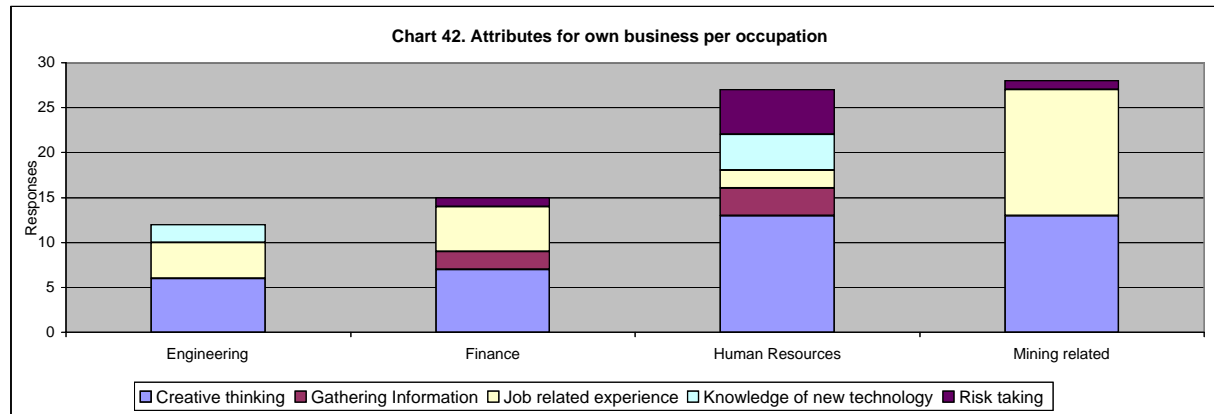
	Actual	Average
Creative thinking	39	16.4
Gathering Information	5	16.4
Job related experience	25	16.4
Knowledge of new technology	6	16.4
Risk taking	7	16.4
Wrong Input		
(blank)		
Grand Total	82	

Average 16.4

H0 rejected with a chi value of 2.478E-11



An analyses per occupation was done and it was found that there was no significant difference between responses with a chi value of 0,108%.



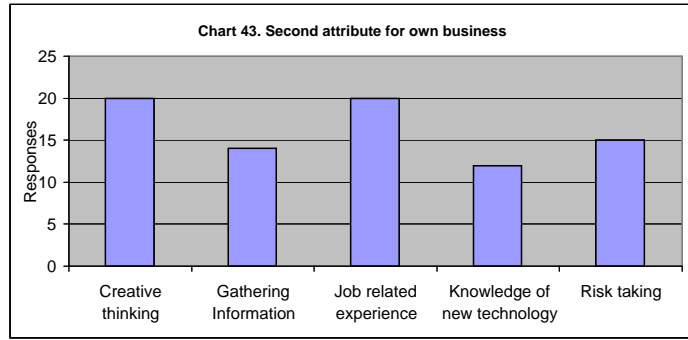
**Question 24.2. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?**

Ranked 2

	Actual	Average
Creative thinking	20	16.2
Gathering Information	14	16.2
Job related experience	20	16.2
Knowledge of new technology	12	16.2
Risk taking	15	16.2
Wrong Input	1	
(blank)		
Grand Total	82	

Average 16.2

H0 accepted with a chi value of 0.5154131



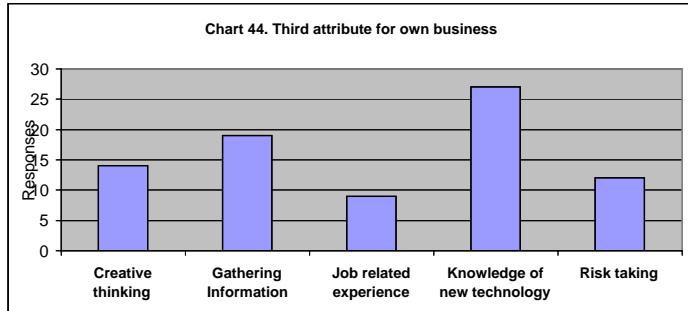
**Question 24.3. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?**

Ranked 3

	Actual	Average
Creative thinking	14	16.2
Gathering Information	19	16.2
Job related experience	9	16.2
Knowledge of new technology	27	16.2
Risk taking	12	16.2
Wrong Input	1	
(blank)		
Grand Total	82	

Average 16.2

H0 accepted with a chi value of 0.0154418



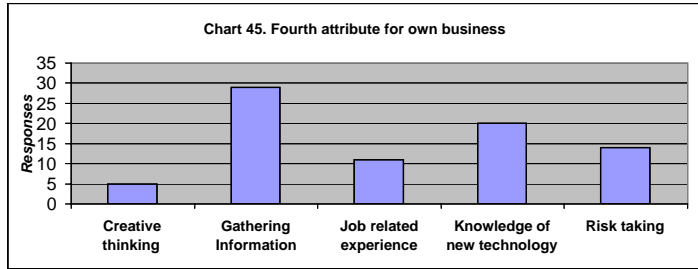
**Question 24.4. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?**

Ranked 4

	Actual	Average
Creative thinking	5	15.8
Gathering Information	29	15.8
Job related experience	11	15.8
Knowledge of new technology	20	15.8
Risk taking	14	15.8
Wrong Input	3	
(blank)		
Grand Total	82	

Average 15.8

H0 rejected with a chi value of 0.0002904



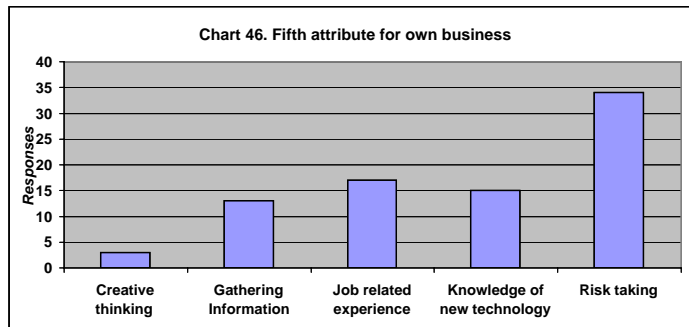
**Question 24.5. Rank the following attributes from most important (1) to least important (5) to be successful in a business of your own?**

Ranked 5

	Actual	Average
Creative thinking	3	16.4
Gathering Information	13	16.4
Job related experience	17	16.4
Knowledge of new technology	15	16.4
Risk taking	34	16.4
(blank)		
Grand Total	82	

Average 16.4

H0 accepted with a chi value of 0.0189416

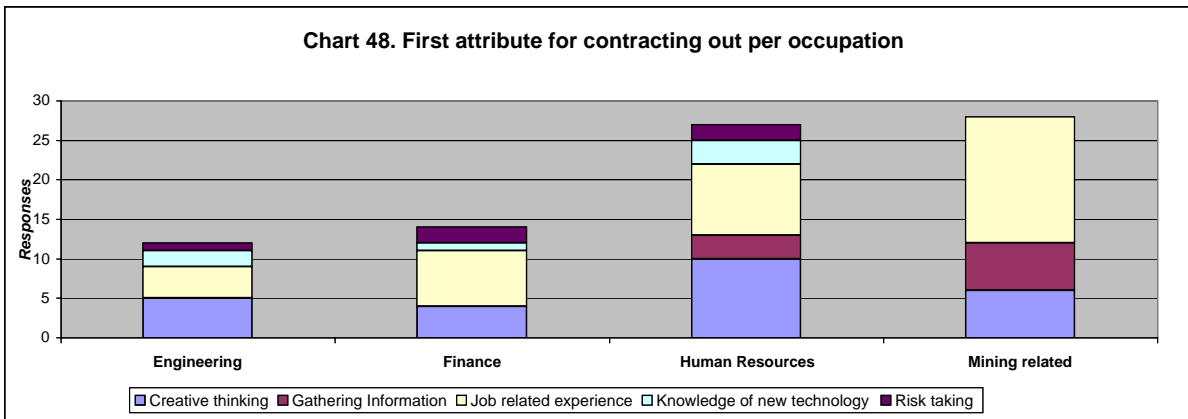
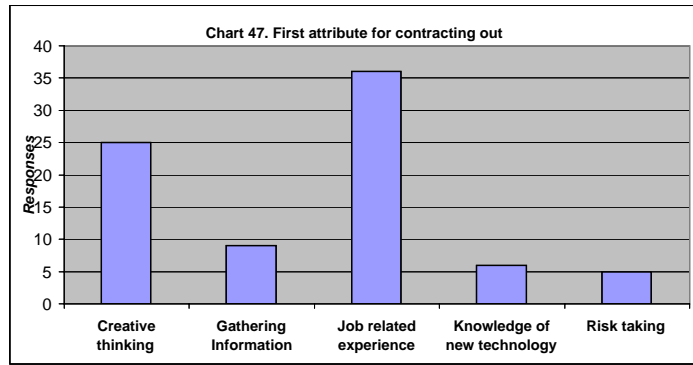


**Question 25.1. Rank the following attributes from most important to least important to be successful in contracting out your services?**  
Ranked 1

	Actual	Average
Creative thinking	25	16.2
Gathering Information	9	16.2
Job related experience	36	16.2
Knowledge of new technology	6	16.2
Risk taking	5	16.2
Wrong Input	1	
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 16.2

H0 rejected with a chi value of 2.087E-09



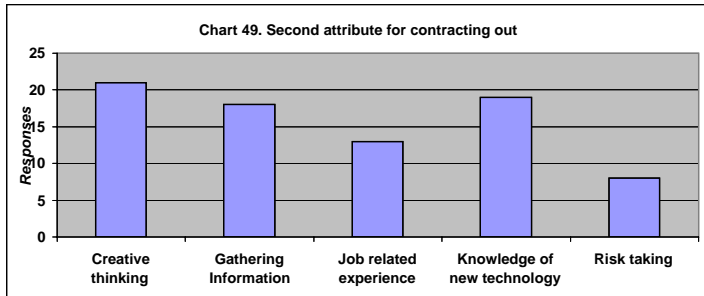
An analyses per occupation was done and it was found that there was no significant difference between responses with a chi value of 0,61%.

**Question 25.2. Rank the following attributes from most important to least important to be successful in contracting out your services?**  
Ranked 2

	Actual	Average
Creative thinking	21	15.8
Gathering Information	18	15.8
Job related experience	13	15.8
Knowledge of new technology	19	15.8
Risk taking	8	15.8
Wrong Input	3	
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 15.8

H0 accepted with a chi value of 0.1352208

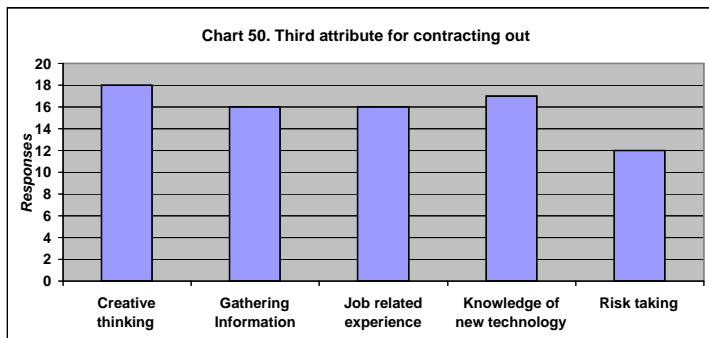


**Question 25.3. Rank the following attributes from most important to least important to be successful in contracting out your services?**  
Ranked 3

	Actual	Average
Creative thinking	18	15.8
Gathering Information	16	15.8
Job related experience	16	15.8
Knowledge of new technology	17	15.8
Risk taking	12	15.8
Wrong Input	3	
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 15.8

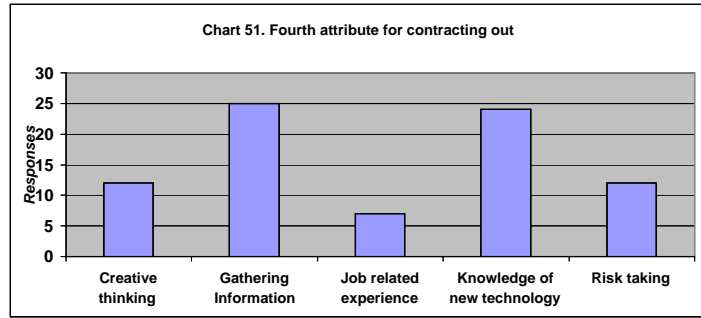
H0 accepted with a chi value of 0.8585775



**Question 25.4. Rank the following attributes from most important to least important to be successful in contracting out your services?**  
Ranked 4

	Actual	Average
Creative thinking	12	16
Gathering Information	25	16
Job related experience	7	16
Knowledge of new technology	24	16
Risk taking	12	16
Wrong Input	2	
(blank)		
Grand Total	82	

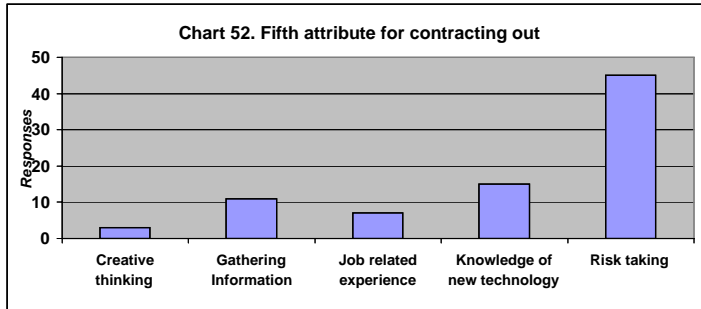
Average 16  
H0 rejected with a chi value of 0.0028559



**Question 25.5. Rank the following attributes from most important to least important to be successful in contracting out your services?**  
Ranked 5

	Actual	Average
Creative thinking	3	16.2
Gathering Information	11	16.2
Job related experience	7	16.2
Knowledge of new technology	15	16.2
Risk taking	45	16.2
Wrong Input	1	
(blank)		
Grand Total	82	

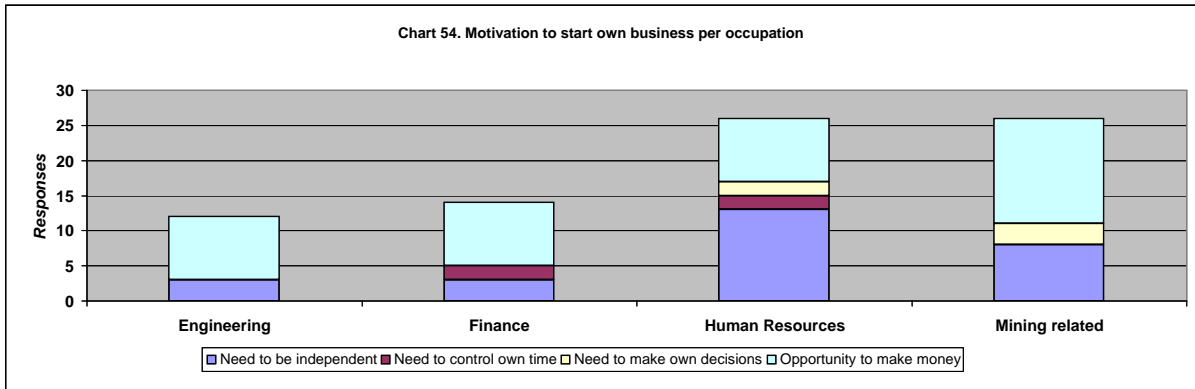
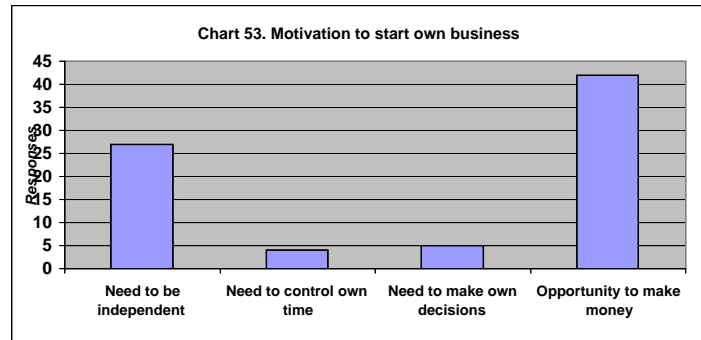
Average 16.2  
H0 rejected with a chi value of 3.803E-14



**Question 26. Which of the following is the most important motivator for a person to start an own business?**

	Actual	Average
Need to be independent	27	16.5
Need to control own time	4	16.4
Need to make own decisions	5	16.4
Opportunity to make money	42	16.4
Wrong Input	4	
(blank)		
Grand Total	82	

Average 16.4  
H0 rejected with a chi value of 8.443E-14



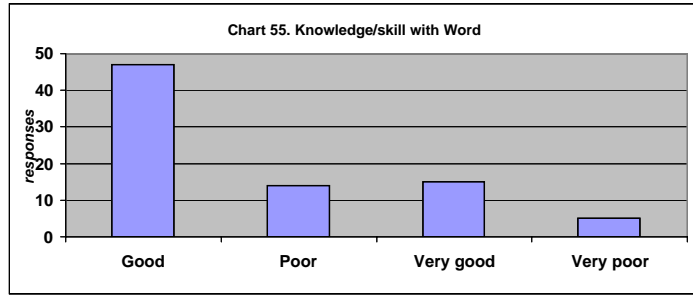
An analyses per occupation was done and it was found that there was no significant difference between responses with a chi value of 0,356%.

**Question 27. How would you rate your skills/knowledge of Microsoft Word?**

	Actual	Average
Good	47	16.4
Poor	14	16.4
Very good	15	16.4
Very poor	5	16.4
Wrong Input (blank)	1	
<b>Grand Total</b>	<b>82</b>	

Average 16.4

H0 rejected with a chi value of 3.94E-14

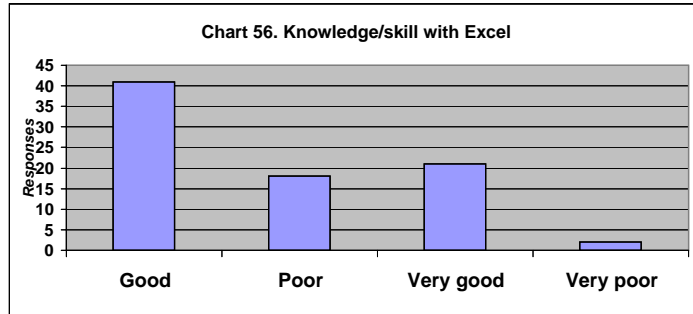


**Question 28. How would you rate your skills/knowledge of Microsoft Excel Worksheet?**

	Actual	Average
Good	41	20.5
Poor	18	20.5
Very good	21	20.5
Very poor	2	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 3.585E-08

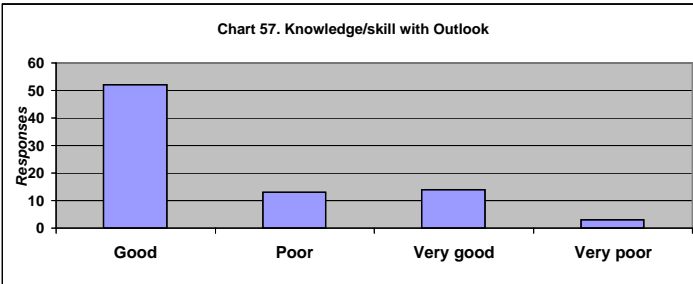


**Question 29. How would you rate your skills/knowledge of Microsoft Outlook or any other E-mail program?**

	Actual	Average
Good	52	20.5
Poor	13	20.5
Very good	14	20.5
Very poor	3	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 1.064E-14

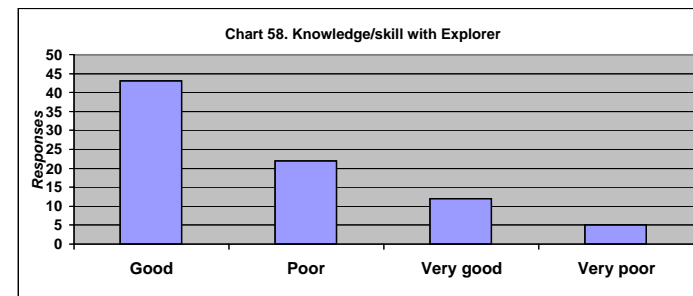


**Question 30. How would you rate your skills/knowledge of Microsoft Internet Explorer or any other Internet Browser?**

	Actual	Average
Good	43	20.5
Poor	22	20.5
Very good	12	20.5
Very poor	5	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 1.04E-08

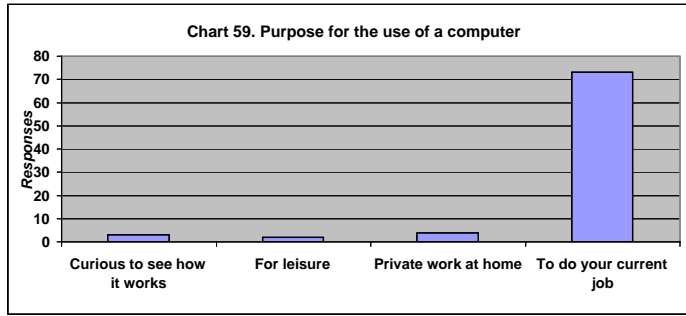


**Question 31. For which purpose do you mostly use a Computer?**

	Actual	Average
Curious to see how it works	3	20.5
For leisure	2	20.5
Private work at home	4	20.5
To do your current job	73	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 1.209E-38

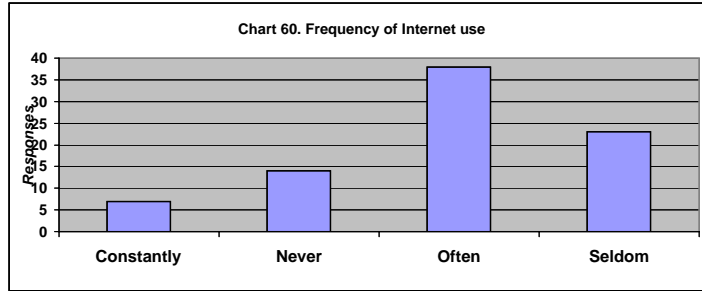


**Question 32. How often do you use the Internet?**

	Actual	Average
Constantly	7	20.5
Never	14	20.5
Often	38	20.5
Seldom	23	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 8.681E-06

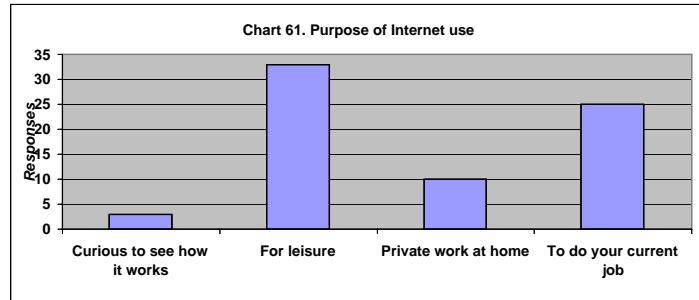


**Question 33. For what purpose do you mostly use the Internet?**

	Actual	Average
Curious to see how it works	3	17.75
For leisure	33	17.75
Private work at home	10	17.75
To do your current job	25	17.75
Wrong Input	11	
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 17.75

H0 rejected with a chi value of 6.041E-07

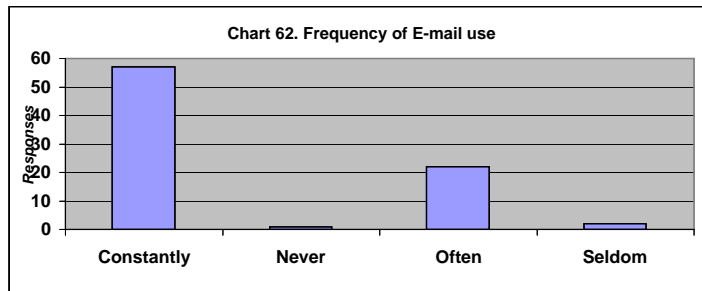


**Question 34. How often do you use E-mail?**

	Actual	Average
Constantly	57	20.5
Never	1	20.5
Often	22	20.5
Seldom	2	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

Average 20.5

H0 rejected with a chi value of 1.312E-21



**Question 35. For what purpose do you mostly use E-mail?**

	Actual	Average
Curious to see how it works	1	20.5
For leisure	3	20.5
Private work at home	2	20.5
To do your current job	76	20.5
(blank)		
<b>Grand Total</b>	<b>82</b>	

**Average** 20.5

**H0 rejected with a chi value of** 3.391E-43

