AN ANALYSIS OF THE FACTORS AFFECTING THE SUSTAINABILITY OF SMALL-SCALE MINING COMPANIES IN THE BOPHIRIMA REGION OF THE NORTH WEST PROVINCE.

A RESEARCH REPORT

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ABSTRACT

This study looks at the factors affecting the sustainability of small-scale mining companies in the Bophirima region of the North-West province. The investigation sought to discover the different problems and challenges in the sustainability of small-scale mining companies. The literature review was conducted in order to analyse the knowledge of whether background characteristics of individuals contribute to the failure of small-scale mining companies. Primary data was collected using a questionnaire. A sample of 48 small-scale mining companies was selected from a population of 78 small-scale mining companies, with a response of 35 small-scale mining companies. Respondents had to provide information about their family background, educational level, experience, training, loci of control and motivation. The findings indicated that the background characteristics of individuals affect the sustainability of small-scale mining companies. This indicates that the majority of small-scale mining companies are not sustainable in the Bophirima geographical area. It can be argued that the success/failure is not only dependent on financial resources but depends on the personality/characteristics of individuals which include education, management skills, work experience, age, commitment, motivation and locus of control. All of this can enhance the sustainability of small-scale mining companies.

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CHAPTER 1
ORIENTATION

1.1 INTRODUCTION

The main purpose of this study is to analyse the factors influencing the sustainability of companies in the mining industry. Small-scale mining can make a great contribution to the development of a country. They can increase the earning power and improve the lives of citizens through self-employment. People are able to generate income for their basic needs through the small-scale mining operations. Small-scale mining is a good means of fighting the current problem of unemployment, especially in a developing country like South Africa. Small-scale mining provides opportunities for entrepreneurs to make use of the business skills as managers of their own businesses.

Small-scale mining can be developed with the assistance of government in the form of loan and credit guarantees or grants from non-governmental organisations. These can be helpful for those members of society who are not well educated and who are mostly unskilled, with no financial resources to start or establish their own business. However, there is a problem or challenge for the sustainability of these small-scale mining operations. The projects fail in their early stage of business life and they also fail to fulfil their financial and strategic goals. According to Nieman et al (2003:32), South Africa has an unacceptable and disappointingly high number of small and micro enterprises failures during their early stage of operation. The problem is mostly due to financial mismanagement.

1.2 BACKGROUND

The small-scale mining industry in the North West province comprises alluvial diamond-digging operations. The diamond diggers work on marginal reserves, which are considered to be unprofitable by larger companies. The average grade is 0, 3 carats to 0, 5 carats for every 100 of material processed. (Mining Weekly Magazine 2006 -03-24:13). Most of the operations are owner managed and take place on farmland in conjunction with agriculture. The influence of diamond-mining is evident when one drives along the main streets of towns like Wolmaranstad, where one will see two or three companies supplying products to the agricultural industry alongside a number of dealerships, such as Komatu, Volvo, Liebherr and Bateman which serve the mining industry. The mining companies are faced with many challenges: such as the Mineral and Petroleum Resources Development Act that is constraining their operations. Many of the mining companies find it challenging to comply with the requirements of the Act, which does not take into consideration the nature of small-scale mining operations. The Act is developed mainly with large companies in mind, and it

is difficult for small-scale mining companies to adhere to the same conditions. As a result it becomes difficult for the mining companies to continue to be economically viable.

In pursuit of identifying valuable information, that will fully address the research, relevant web sites, theories from reputable economists and personal interviews with relevant individuals will be examined. The outcome of the research will inform and help decision-making for managers in the mining industry. Small-scale mining, in most instances, fails to remain profitable or generate income as planned. People involved in the projects are not seen to be able to move on from their initial situation to better standards of business and life.

It is therefore the purpose of this study to establish what the challenges or problems are in the sustainability of small companies in the mining industry, and the role which individual characteristics play in the success or failure of businesses. The purpose of chapter one is to introduce the background to the problem and explain how the research will attempt to establish principles necessary to ensure sustainability of small companies in the mining sector, thereby sustaining jobs, limiting retrenchments and creating more jobs.

The competitive structure of the mining industry will be examined and focus will be on the nature of competition in and around the industry. Ways in which the competitive structure could be utilized to drive strategies in seeking competitive advantage will also be examined. Using the environment and the industry structure analysis, a clearly reasoned set of assumptions as to the development facing individual companies, within the small scale mining industry, will be formulated.

1.3 PROBLEM STATEMENT

In this study focus will be on the challenges facing small-scale companies in the mining industry and their sustainability. Unfortunately these small-scale mining operations fail during the early stages of their business life, usually during the first two years of operation. These individuals do not become independent, but rather continue to be burdens on their families, government and non-governmental organisations. Enhancing the survival rate of these small-scale mining operations has been a great challenge. The question of sustainability and its challenges is therefore raised in the context of the problems in the mining sector, and this study seeks to determine the role that background characteristics of individuals play in this failure.

1.4 OBJECTIVES

The main objective of the study is to determine the factors affecting sustainability of small-scale mining companies in the Bophirima Region.

The sub-objectives are:

- To determine the role of education in the success/failure of companies in the mining sector.
- To establish the role of work experience in the success/failure of companies in the mining sector.
- To determine the role of entrepreneurial characteristics in the sustainability of small companies in the mining sector

1.5 IMPORTANCE OF THE RESEARCH

The purpose of the study is to investigate the factors that affect the sustainability of companies in the mining industry. A many different organisations are dedicated to change the lives of the jobless or the working poor, through establishing small-scale mining operations.

However, the projects are generally not seen to be successful and sustainable according to plans of funding organisations, which are discouraged from continuing their assistance. A study such as this is necessary to help government, private and donor organisations in policy design and implementation of procedures, especially in the profiles of individuals, for whom projects are to be considered.

The small-scale mining operations play a vital part in sustaining the economies of rural towns in the North West province, especially around the Bophirima region. The rural towns include Wolmaranstad, Christiana, Bloemhof and Schweizer-Reneke. Small-scale mining operations, in alluvial diamonds, contribute about 80% to the economies of these towns, (Mining Weekly Magazine 2006-03:13). The study recognises that, in addition to the Mineral and Petroleum Resources Development Act, it is costly for small-scale miners to complete the environmental-impact assessments required, which costs between R60 000 and R80 000. The sustainability of the mining companies is very important, because, among other factors, every worker has an average of seven dependents.

The researcher realises the importance of employment and the role of mines in this regard. If jobs are not sustained in mines, it does not only result in lost income, but also the consequences of households losing their livelihood, regions losing purchasing power, workers facing prolonged unemployment, shrinking of local economies and increasing crime.

1.6 METHODOLOGY

The collection of data will primarily entail both the qualitative and quantitative research approaches. The first step will concentrate on documentary material with the view of addressing the broader background of the mining industry in South Africa.

A questionnaire will be used to elicit information for analysis and also for reporting and recommendations. The relevant government departments in mining and minerals will also be visited to gain access to information. They include the Department of Minerals and Energy, the Department of Land Affairs, and the Department of Labour.

1.7 SCOPE OF STUDY

The study will be conducted at the mining companies (mostly small-scale) in the North West province with special emphasis around the Bophirima region.

1.8 STRUCTURE OF THE DISSERTATION

In chapter one the background is given and the problem statement highlighted. Objectives are formulated and the methodology to be used.

In chapter two the base theory of the research will be discussed together with a critical review of various theories.

Chapter three will discuss specific theories related to the problem and cite relevant studies indicating shortcomings.

In chapter four the origin of the statement of the problem will be discussed. Sub-problems will be formulated together with objectives based on the problem.

In chapter five the justification for the methodology and also research of procedures including methods of analysis, and statistical techniques will be entertained. Ethical considerations and limitations will be discussed.

Chapter six will be an analysis of data and results will be represented.

In chapter seven there will be a conclusion on each research issue including implications and recommendations. Recommendations for future research will also be suggested.

1.9 LIMITATIONS

In investigating the relevance of factors affecting the sustainability of companies in the mining industry, the following are some of the limitations anticipated in the research:

- It will not consider anything beyond the factors affecting the sustainability of small-scale companies in the mining industry.
- Only small-scale mines in South Africa are considered and specifically in the Bophirima region (North West Province) and mines outside South Africa will be omitted.
- Access to confidential data might be one of the hindrances for the completeness of the study.

1.10 CONCLUSION

The chapter has introduced the background of the factors that affect small-scale companies in the mining sector. The chapter has also introduced the background of the problem, objectives and indicating the data collection method and the geographic area of research.

In chapter 2 the researcher will introduce the theoretical foundation to the base theory of the discipline and give a critical review of various theories of the research topic.

CHAPTER 2

THEORETICAL FOUNDATION

2.1 INTRODUCTION

This part of the study will look, among other things, at the economic fundamentals that are viewed as having an impact on the performance of the industry. The main factors that affect industry performance are political, economic, social and technological factors. The chapter also discusses the base theories of entrepreneurship and small, medium and micro-enterprises.

2.2 THEORETICAL BACKGROUND

Careful planning enables a company to speak in a clear voice in the marketplace, so that customers understand what the company is and what it has to offer, that competitors don't-especially as it decides how to create value for customers, shareholders, employees and society (Solomon et al, 2006:34). Business planning is an ongoing process of making decisions that guide the company both in the short-term and the long haul (Solomon et al 2006:35). Planning means that an organisation develops objectives before it takes action. This also implies that planning identifies and builds on a company's strengths, and it helps managers at all levels to make informed decisions in a changing business environment. Small-scale mining companies need to have business plans that will help them throughout their business life.

An industry's environment is composed of forces that are external to the industry and potentially affect its performance. The companies in the industry need to monitor the key external macro-environment forces that affect and influence them in achieving their goals. The managers must monitor and diagnose the environmental forces because of their direct or indirect impact on organisations (the forces are economical, competitive, political-legal, and technological).

The general environment, according to Hellriegel, Jackson and Slocum (2002:77) includes the external factors, such as the type of economic system (capitalism, socialism, or communism) and economic conditions (expansionary and recessionary cycles and the general standard of living); type of political system (democracy, dictatorship, or monarchy); condition of the ecosystem (extent of land, water, and air pollution); demographics (age, gender, race, ethnic origin and education level of the population); and cultural background (values, beliefs, language, and religious influences).

The economic system includes a free-market competition, private contracts, profit incentives, technological advancement, and organised labour with collective bargaining rights. The government (part of the political system) acts as a watchdog over business, providing direction in anti-trust, monetary policy, human rights, defence, and environmental matters. The challenging economic and political conditions include the fluctuation of inflation, unemployment, taxes, and interest rates and the environmental and safety regulations covering both the workplace and goods produced. This chapter will also touch on the issue of new markets, where the limitations of geographic borders are less important. Companies can increasingly reach customers directly without regard to their own or their customers' physical location. The Internet is revolutionary because it has dramatically reduced the cost of communication and co-ordination in business and personal transactions and shortened distribution channels.

2.2.1 THE EXTERNAL ENVIRONMENT

An industry's environment is composed of forces that are external to the industry and potentially can affect its performance. The companies in the industry need to monitor the key external macro-environment forces that affect and influence them in achieving their goals. The trends and important developments in the mining industry that needs attention to reveal the opportunities and threats will be discussed.

The external environment includes the economic, political, social and technological environments. The external environment is discussed and illustrated:

2.2.2 THE ECONOMIC ENVIRONMENT

The state of the economy, in which a company does business, is vital to the success of its marketing plans. According to Solomon et al (2006:50) the overall pattern of changes or fluctuations of an economy is called the business cycle. All economies go through cycles of prosperity (high levels of demand, employment and income), recession (falling demand, employment and income), and recovery (gradual improvement in production, lowering unemployment and increasing income). The economic environment includes: the availability of capital, the interest rate and inflation, the strength of the competitors and the level of employment. These factors have been analysed as follows:

- **THE AVAILABILITY OF CAPITAL**

Aaker (1995) is of the opinion that industries such as mining and automobiles require huge amounts of investments to build the necessary infra-structure such as: the railway system, sinking of shaft and extraction plants. Added to this is the fact that investment in the mining

industry is risky. The availability of capital in the mining industry is not easy to acquire because the providers of finance (shareholders and long-term debt providers) require high returns on their funds in order to commensurate for the concomitant high risk involved.

To address this problem, the mining companies opt for mergers, acquisitions, capital ventures and foreign listings as ways of raising capital. JCI merged with Anglo-American and formed the Amplats Ltd; Harmony Gold Mining Co. Ltd acquired the Randfontein Estates Gold Mines; Western Areas Ltd formed a joint venture with a Canadian company, Placer Dome Inc. and Anglo American listed on the London Stock Exchange.

- **THE INTEREST RATE AND INFLATION**

Government has adopted sound monetary and fiscal policies and has implemented them effectively. As a result, the country is poised for sustained growth in the range of 5% accompanied by single digit inflation and declining interest rates. The investors in the industry require high returns on their funds to commensurate with the high risk associated with their investment. The mining companies cannot do much to control the interest rates except for managing the loans, and all forms of capital raising that require paybacks at rates linked to interest rates. To minimize the impact of interest charges, the companies can opt for raising capital through shares. In this way the shareholders face the ultimate risk as they are the last to be repaid in the event of liquidation. However, share capital is relatively expensive as shareholders expect a high return for the risk.

- **THE STRENGTH OF COMPETITORS**

Aside from customers, competitors are the single most important day-to-day force facing organisations. For virtually all organisations the most critical environmental constraint is their actions in relation to competition. Therefore any change in the environment, that affects any competitor, will have consequences that require some degree of adaptation. This requires continual change and adaptation by all competitors merely to maintain their relative position. The essence of formulating competitive strategy is related to a company and its environment. Although the relevant environment is very broad, encompassing for example, social as well as economic forces, the key aspect of the organisation's environment is the industry or industries in which it competes. Industry structure has a strong influence in determining the competitive rules of the game as well as the strategies potentially available to the organisation (Hellriegel et al, 2002:89).

The intensity of competition in an industry is not a matter of coincidence as it is rooted in its underlying economic structure and goes well beyond the behaviour of current competitors. The collective strength of Porter's five basic forces will be discussed in section 2.2.5. Small-scale mining groups (such as JIC, JC Mining, and Petra Mining) and the black economic empowerment groups (for example African Rainbow Minerals, Khumo Bothong, Mvelaphanda) are the threatening competitors in the industry (for big and established groups).

These competitors are a threat to the industry because the government, in addressing the past imbalances, give preference to exploiting the mineral rights by these groups. This move may see the suffering of big business in the industry. To address this threat the big mining companies in the mining industry are forming joint ventures with these groups. The recent example is Harmony Gold Mining in a joint venture with African Rainbow Minerals to buy two of Gold Fields gold mines in the Free Sate.

- **THE LEVEL OF EMPLOYMENT**

According to the Department of Minerals and Energy (DME: 1998) more than 200 000 workers have lost their jobs since 1988. The primary reason has been the structural change with which the industry has been confronted as mining operations become deeper and high-grade ore is being depleted. Since 1988, the gold mining industry has experienced a tremendous decline (48%) in job opportunities.

Labour costs in the industry form about 40% to 50% of the working costs. When there is a need for cost reduction, labour becomes the first target. This action results in the labour movement opting for strike actions, which have a negative impact on the economy and the survival of the mining sector.

To address this threat, the industry has collaborated with labour and government collectively to address the survival of the industry. This has given the industry some future vision.

- **HIV/AIDS**

The issue of HIV/Aids has been reported as being rife in the mining industry due to the hostel system and other social issues. The industry may experience huge labour shortage should things remain as they are. HIV/Aids is a threat to the industry because it appears to be affecting the young. In making technological advancement, it is this younger generation who is the hope of the industry. This threat is quite complicated but needs to be addressed. However, business and government have started addressing the epidemic.

On the other hand, the companies are now considering speeding up the technological transformation in the industry to address the expected shortage of the workforce. The move however, requires huge capital due to the expensive machinery involved. This move is criticized by the labour movement of which the National Union of Mineworkers is the largest individual union (it directly impacts on labour and does not address the unemployment issue.)

2.2.3 THE POLITICAL ENVIRONMENT

Every industry is run according to laws and regulations, which influence the industry from its external environment. Solomon et al (2006:52) refers to the legal environment as the local, state, national, global laws and regulations that affect business. The legal and regulatory controls can be prime motivators for many business decisions. Recent legislation attempts to correct inequalities of the past to increase global competitiveness. Some of the laws have been criticized as increasing labour rigidity, which in turn discourages foreign investment. The following are some key organisations/laws affecting business activity: National Economic Development and Labour Council, Commission for Conciliation Mediation and Arbitration, Labour Relations Act (LRA), Basic Condition of Employment Act, Employment Equity Act, Skill Development Act, Companies Act, Mine Health and Safety Act, Occupational Health and Safety Act.

These laws are intended to address the past imbalances and inequalities and at the same time protect the rights of the workers which is seen as a threat to the ailing industry. The role of government will be discussed in greater detail in section 2.2.7.

2.2.4 THE TECHNOLOGICAL ENVIRONMENT

Companies today see technology as an investment they can't afford to ignore, as technology provides many companies with important competitive advantages (Solomon et al 2006: 52). Changes in technology can transform an industry dramatically. Every new technological development or innovation creates opportunities for and threats to the environment. The gold mining industry is affected by for instance, deep-level mining as a technological development.

The big mining companies have been in existence for over 50 to 100 years. As mining is a depleting activity, the companies, at some stage, face the challenge of mining at deeper levels. The current shallow reserves are expected to be totally depleted in the next five to ten years. The need for technological development required for deep-level mining methods

is a threat because it should be done at a faster rate bearing in mind the fact that shallow reserves are being depleted. It is evident that easily accessible high-grade ore has been exhausted. The current technology and costs structure prohibits the industry to continue operating economically. Also, the change over from the current conventional mining methods will require further capital, adaptation and face teething problems.

To adapt to the anticipated methods, the mines need to address the threat by pro-actively training the workforce to be ready for the change over. In addition, the research into the required mechanized mining methods needs to be completed and tried. Currently, much research is being done on deep-level mining methods.

2.2.5 THE INDUSTRY STRUCTURE

Companies strive to build sustainable competitive advantage. Kotler (2003:22) defines competitive advantage by saying that increasingly a company wins, not with a single advantage, but over time layering one advantage on top of another. It is the ability to perform in one or more ways that competitors cannot or will not match. The companies must keep abreast of what the competition is doing so that they can develop new product features, new pricing schedules or new advertising to maintain or gain market share. In order to analyse a firm's competitive strategy, one needs firstly to analyse the competitive arena. To define the arena in which a company /industry operates, Porter (1985) offers a useful framework for examining competitive forces in the value adding system and urges that the traditional view of competition is expanded by recognizing five competitive forces that determine the industry performance. These forces are:

(a) INTENSITY OF RIVALRY AMONG EXISTING COMPETITORS

Rivalry among existing competitors can take the form of using tactics such as price competition, advertising battles, product introductions, and increased customer service or warranties. Rivalry occurs because one or more competitors either feels the pressure or sees the opportunity to improve its position. In most industries, competitive moves by one firm have noticeable effects on its competitors and thus may incite retaliation or efforts to counter the move.

This pattern of action or reaction may or may not leave the initiating firm and the industry, as a whole, better off. If moves and counter-moves escalate, then all firms in the industry may suffer and be worse off than before. Some forms of competition, notably price competition, are highly unstable and quite likely to leave the entire industry worse off in terms of profitability. Price cuts are quickly and easily matched by rivals, and once matched,

they lower revenues for all firms. Rivalry in some industries is characterized by such phrases as "warlike," "bitter", or cut-throat," whereas in other industries it is termed "polite" or "gentlemanly". Intense rivalry is the result of a number of inter-acting structural factors.

According to Porter (1985), an industry is unattractive if it already contains numerous, strong or aggressive competitors. He argues that the industry is even more unattractive if it is stable or declining. The gold mining industry contains numerous and aggressive competitors. Rivalry among the mining companies is hostile. A recent example illustrates this when Gold Fields decided to sell its gold mines in the Free State, and Harmony Gold Mining and African Rainbow Minerals formed a joint venture to oust the Khumo Bathong consortium of the opportunity. The developed (old mining companies) seek a competitive advantage by forming ventures with the black economic empowerment groups, in order to receive the government backing and recognition to empower these groups. Coupled to this will be the companies' financial abilities, which the black empowerment groups are required to agree to the formation of the venture.

Rivalry among competing firms is usually the most powerful of the five competitive forces. The strategies pursued by one firm can be successful only to the extent that they provide competitive advantage over the strategies being pursued by rival firms. Changes in strategy by one firm may be met with retaliatory counter-moves, such as lowering price, enhancing quality, adding features, providing services, extending warranties, and increasing advertising. The intensity of rivalry among competing firms tends to increase as the number of competitors increases, as competitors become more equal in size and capability, as demand for the industry's product declines, and as price cutting becomes common. Rivalry also increases when consumers can switch brands easily, when barriers for leaving the market are high, when fixed costs are high, when the product is perishable, when rival firms are diverse in strategies, origin, and culture, and when mergers and acquisitions are common in the industry. As rivalry among competing firms intensifies, industry profits decline, in some cases to the point where an industry becomes inherently unattractive.

(b) THREAT OF POTENTIAL ENTRANTS

The threat or reality of increased competition in an industry depends on the relative ease with which new firms can compete with established firms. In an industry with low barriers to entry, competition is fierce. New entrants to an industry bring new capacity, the desire to gain market share and often-substantial resources. Prices are bid down or incumbents' costs inflated as a result, reducing profitability. Companies diversifying through acquisition into the industry from other markets often use their resources to increase competitiveness.

Thus, acquisition into an industry with the intent to build market position should probably be viewed as entry though no entirely new entity is created (Hellriegel et al, 2002:90).

The threat of entry into an industry depends on the barriers to entry that are present, coupled with the reaction from existing competitors that the entrant can expect. If the barriers are high, the newcomer can expect aggressive retaliation from entrenched competitors. If the competitors have already established dominance in all but a few segments of the market, the company might try to concentrate its marketing in one of the remaining segments, Kotler (2003:166). The company should focus on market segments that have intrinsic attractiveness and that it has a differential serving advantage.

Companies that gain a market share in the gold mining industry are the small-scale mining groups. These groups gain their competitive advantage through cost leadership. High initial host, existing brand loyalty, economics of scale, government actions that limit entry, or access to distribution channels all create opportunities for existing firms that make it difficult for new firms to enter the industry (Parker 2005: 135). The logic behind pursuing an overall cost leadership strategy is by assuming that the firm will earn above-average profits in the industry despite the presence of the five competitive forces. The main thrust of an overall cost leadership strategy is in actions that will ensure low costs relative to competitors. The small-scale groups can afford this position because they do not carry the overhead costs that the big companies do.

Whenever new companies can easily enter a particular industry, the intensity of competitiveness among companies increases. In a general sense, all competitors produce substitute goods or services, or goods or services that can easily replace another's goods or services (Hellriegel et al, 2002:90). Barriers to entry, however, can include the need to gain economies of scale quickly, the need to gain technology and specialized know-how, the lack of experience, strong customer loyalty, strong brand preferences, large capital requirements, lack of adequate distribution channels, government regulatory policies, tariffs, lack of access to raw materials, possession of patents, undesirable locations, counter-attack by entrenched companies, and potential saturation of the market. The strategist's job is, therefore, to identify potential new companies entering the market, to monitor the new rival companies' strategies, to counter-attack as needed, and to capitalise on existing strengths and opportunities.

(c) THREAT OF SUBSTITUTE PRODUCTS

All firms in an industry are competing, in a broad sense, with industries producing substitute products. Substitutes limit potential returns of an industry by placing a ceiling on the prices which firms, in the industry, can profitably charge. The more attractive the performance alternative offered by substitutes, the firmer the lid on industry profits. Companies can build a competitive advantage from many sources: such as superiority in quality, speed, safety, service, design, and reliability, together with lower cost, lower price, and so on according to Kotler (2003: 22). This implies that it is more often some unique combination of these, rather than a single silver bullet, that delivers the advantage. A great small scale company will have incorporated a set of advantages that all re-enforces each other around a basic idea. Kotler argues that an industry is unattractive when there are actual, or potential substitutes for the product, and it has to watch closely the price trends of the substitute products. Gold products (jewellery, medals, coins, decorative appliances.) are being substituted by platinum and silver. However, the price of platinum works contrary to this because the price is far higher than the gold price. Copper has also gained entrance and substitutes gold in electronics, although gold is still used in large volumes and is a good conductor of electricity.

In many industries, firms are in close competition with producers of substitute products in other industries. The presence of substitute products puts a ceiling on the price that can be charged before the consumers will switch to the substitute product. Competitive pressures, arising from substitute products, increase as the relative price of substitute products declines and as consumers' switching costs decrease. The competitive strength of substitute product is best measured by the inroads into market share those products obtain, as well as those firms' plans for increased capacity and market penetration (David, 1997:128).

(d) BARGAINING POWER OF SUPPLIERS

Suppliers have bargaining power over participants in an industry by threatening to raise prices or reduce the quality of purchased goods and services. Powerful suppliers can thereby squeeze profitability from an industry unable to recover cost by increases in its own prices. By raising their prices, for example, chemical companies have contributed to the erosion of the profitability of contract aerosol packagers because the packagers, facing intense competition from self-manufacture by their buyers, accordingly have limited freedom to raise their prices. According to Porter (1985), an industry is unattractive if its suppliers are able to raise prices or reduce the quality supplied.

(e) BARGAINING POWER OF BUYERS

Buyers compete in the industry by forcing down prices, bargaining for higher quality or more services, and trading off competitors against each other, all at the expense of industry's important buyer groups. This will depend on a number of characteristics of its market situation and on the relative importance of its purchases from the industry compared with its overall business. According to Porter (1985), an industry is unattractive if the buyers have a growing bargaining power. Buyers' bargaining power grows when they are more concentrated or organised. The buyers of gold are operating on a large scale, for instance, the central bank that buys gold for monetary reasons and the jewellery manufacturers. These groups are organized and influence the price of gold by selling gold from their reserves.

The success of a company depends ultimately on the success of its customers and partners. But a company should not try to please everyone. That would be a sure way to fail (Kotler 2003:175). As important as it is to watch the competition, it is more important to concentrate on one's customers. Customers, not competitors determine who wins the war. Kotler also argues that a better defence from the buyer's power consists by developing superior offers that strong buyers cannot refuse. This is impractical in the gold market because the price of gold is internationally controlled. At what price a company sells its gold remains a question to be answered. In addition, the big buyers always have gold reserves in excess of the seller's reserves, a move that can decrease prices and which would be to the detriment of the suppliers (mines) themselves.

When customers are concentrated, large, or buy in volume, their bargaining power represents a major force affecting intensity of competition in an industry. The rival companies may offer extended warranties or special services to gain customer loyalty whenever the bargaining power of consumers is substantial. Bargaining power of consumers is also higher when the products, being purchased, are standard or undifferentiated. When this is the case, consumers can to a greater extent often negotiate the selling price, warranty coverage and accessory packages.

2.3 HUMAN RESOURCE MANAGEMENT

The owners of small-scale mining companies need to recognise the need for managing their human capital in order to achieve the success and sustainability in their businesses. Human resource management is defined by price (1997:1) as a philosophy of people management based on the belief that human resources are uniquely important to sustained

business success. An organization gains competitive advantage by using its people effectively, drawing on their expertise and ingenuity to meet clearly defined objectives. Human resource management is aimed at recruiting capable, flexible and committed people, managing and rewarding their performance and developing key competencies.

The business environment is described by Needle (1994:26) as all factors which exist outside the business enterprise, but which inter-act with it. Traditionally, human resource managers were closely involved in employment legislation, industrial tribunals and trade unions at a functional level. Human resources management's strategic emphasis requires a focus on other environmental variables. Government, economic, social security, education and training policies affect the availability, cost and quality of available employees.

Employee resourcing is critical to the sustainability of a business entity. Resourcing is the process by which people are identified and allocated to perform necessary work. Resourcing has two strategic imperatives: first, minimizing employee costs and maximizing employee value to the organization; second, obtaining the correct behavioural mix of attitude and commitment in the work force. Employees are expensive assets and they must be allocated carefully and sparingly. In terms of costs and efficiency, effective resourcing depends on the care taken in deciding which tasks are worthwhile and the levels of skill and ability required to perform them. There must be human resource planning. It is a process which anticipates and maps out the consequences of business strategy on an organisation's human resource requirement. This is reflected in planning of skill and competence needs as well as total head counts.

2.4 GOVERNMENT

Government will be discussed primarily in terms of its possible impact on entry barriers, but in the 1970s and 1980s government at all levels had to be recognised as being potntilly able to influence many, if not all, aspects of industry structure (directly and indirectly). In many industries, government is a buyer or supplier and can influence industry competition by the policies it adopts. Government can also affect the position of an industry with substitutes through regulations, subsidies, or other means. Government can also affect rivalry among competitors by influencing industry growth, the cost structure through regulations, and so on.

Thus, no structural analysis is complete without a diagnosis of how present and future government policy, at all levels, will affect structural conditions. For purposes of strategic analysis it is usually more illuminating to consider how government affects competition

through the five competitive forces, than to consider it as a force in and of itself. However, strategy may well involve treating government as an actor to be influenced.

2.5 LABOUR

One usually thinks of suppliers as other firms, but labour must be recognised as the supplier as well, and one that exerts great powers in many industries. There is substantial empirical evidence that scarce, highly skilled employees and/or tightly unionised labour can bargain away a significant fraction of potential profits in an industry. The principles in determining the potential power of labour as a supplier are similar to those just discussed. The key additions in assessing the power of labour are its degree of organisation, and where the supplier of scarce varieties of labour can expand. Where the labour force is tightly organised or the supply of scarce labour is constrained from growing, the power of labour can be high.

The conditions determining supplier's power are not only subject to change but is also often out of the firm's control. However, as with the buyer's power the firm can sometimes improve its situation through strategy.

2.6 ENTREPRENEURSHIP AND SMALL BUSINESS

It is important to distinguish between entrepreneurial ventures and small business. Both are critical to the performance of the economy but serve different economic functions. Wickham (in Nieman et al 2004:10) believes that both of them pursue and create new opportunities differently. They fulfil the ambitions of their founders and managers in different ways. They both need entrepreneurial action for start up, but the small business venture will tend to stabilise at a certain stage.

2.6.1 SURVIVALIST AND MICRO ENTERPRISES

These are businesses involved in a few income-generating activities conducted by people with no knowledge about or skill in the business in which they are involved. Roadside car washers, street hawkers, are among them. They are normally called the informal sector. Researchers' 'interest in the informal sector started in the 1970's after the publication of the International Labour Office/United Nations Development Programme (ILO/UNDP) report on Kenya. In this report the positive role played by these sectors was recognised for the first time. Although most academics do not agree on the entrepreneurial qualities of these participants, they meet the criteria of the definition. They do have entrepreneurial characteristics and most of them end up as small and micro-enterprise bordering on mere survival. Their propensity to create employment or growth is limited by a lack of skills and resources (Nieman et al 2004:36).

According to Quo-Enoo (in Nieman et al 2004:37) informal entrepreneurs are not recognised by the mainstream business enterprises and in all cases are denied the basic input they desperately need to develop their business enterprises. They come from the very poorest of poor areas of the economy; have no formal training and very little educational background. They are denied banking facilities by the established banks and the government only pays lip service to solving their problems. An informal business enterprise is one that requires no formality to establish and can be operated from anywhere, for example, the owner's home. Depending on the nature of the business enterprise the capital is very little; a day's wages are enough to start the venture. Most enterprises are mainly started to provide the basic daily necessities.

Maharaj (in Nieman et al 2003:37) emphasises that street vendors are the most visible aspect of the informal economy. They are often regarded as a nuisance, obstructing the flow of commerce and are unwelcome proof of the countries under-development. Yet, street vendors contribute positively to the economy by distributing a significant share of goods and services at low price, thus helping consumers in the low to medium income brackets. The informal and survivalist entrepreneurs come mostly from the rural areas. They are involved in the most diversified sector of the economy and include trading, retailing, handcraft, farming, food vending (fruit and vegetables), hairdressing, phone services, typing, sewing, brick making, construction and manufacturing.

The level of formal education is very low: most have dropped out of school by or before grade 9. As a result most people cannot even comprehend the legislation placed before them and written document must be interpreted for them. Demographically, it is the most impoverished environment. Most informal and survivalist entrepreneurs live in shacks and often mud houses with weed as roofing material.

2.6.2 SMALL-SCALE ENTREPRENEURS

A small-scale entrepreneur with 10 to 49 employees qualify for a loan from a bank, is well educated and have adequate collateral to apply for loans. An entrepreneur who operates a small accounting or law firm is an example.

Christianson (2004:22) based on the data from Ntsika, provides a statistical snapshot of distribution, provincial share and density of SMMEs including survivalists in South Africa in Table 2.1

Table 2.1: DISTRIBUTION OF ALL ENTERPRISES AND SMMEs BY PROVINCE.

Province	Number of SMMEs	Percentage of total number of SMMEs in SA
Gauteng	414166	38.4
Kwazulu-Natal	198749	18.4
Western Cape	144749	18.4
Eastern Cape	94253	8.7
North West	56117	5.2
Mpumalanga	53636	5.0
Limpopo	49985	4.6
Free State	49335	4.6
Northern Cape	19791	1.7
RSA	1079627	100

SOURCE: ENTERPRISE (2004:22)

In table 2.2 provincial enterprises are illustrated. As can be seen from the table, Gauteng is the leading province in the total number of SMMEs in the country. Kwazulu-Natal and the Western Cape follow.

TABLE 2.2 PROVICIAL SHARES OF ENTERPRISES BY SIZE

Province	Survivalist	Micro (0)	Micro (1-4)	Very Small	Small	Medium	Large
Western Cape	8.6	1.5.4	8.6	15.4	12.4	16.3	11.8
Eastern cape	9.8	9.5	12.6	8.2	5.6	5.1	6.4
Northern cape	1.5	1.2	3.9	1.8	1.5	1.2	1.7
Free State	5.4	33	5.5	4.9	5.5	3.3	5.6
Kwazulu Natal	6.1	18.8	21.4	18.2	17.6	16.9	17.9
North West	6.5	5.4	4.4	4.1	3.8	3.1	2.5
Gauteng	19.6	36.7	32.5	40.8	46.1	45.4	49.7
Mpumalanga	21.7	3.8	4.6	3.7	4.9	5.7	4.7
Limpopo	20.8	5.9	6.8	2.9	2.6	2.4	4.8
RSA	100	100	100	100	100	100	100

SOURCE: ENTERPRISE (2004:22)

The provincial share of small-scale enterprises by size for Northwest is 3,8% as compared to 46,1% of Gauteng. This implies that North-West Government needs to put more emphasis on this category by creating, and enabling, environment to encourage a significant growth.

Table 2.3 estimates the business density of each province by comparing the number of enterprises to the population of the province. It shows that the proportion of formal business to the provincial population is highest in Gauteng and the Western Cape.

TABLE 2.3: SMME DENSITY PER PROVINCE.

Province	Survivalist	Micro (0)	Micro (1-4)	Very Small	Small	Medium	Large
Western Cape	0.6	1.3	0.7	0.9	0.2	0.0	3.7
Eastern cape	0.5	0.5	0.3	0.1	0.1	0.0	1.5
Northern cape	0.4	0.3	0.7	0.4	0.1	0.0	1.9
Free State	0.5	0.4	0.4	0.3	0.1	0.0	1.7
Kwazulu Natal	0.6	0.8	0.6	0.4	0.1	0.0	2,5
North West	0.4	0.4	0.3	0.2	0.1	0.0	1.4
Gauteng	0.9	2.3	1.2	1.6	1.5	0.3	7.8
Mpumalanga	0.6	0.4	0.4	0.3	0.1	0.0	1.8
Limpopo	0.6	0.5	0.3	0.1	0.0	0.0	1.4

Number of enterprises per 100 people
SOURCE: ENTERPRISE (2004:22)

The proportion of formal business to the Northwest province's population is low compared to Gauteng and the Western Cape.

2.7 CONCLUSION

The chapter gave an analysis of the theoretical aspects of the research topic. The external environment that includes the economic, political and technological environments has been discussed. Human resource management as a philosophy of people management based on the belief that human resources are uniquely important to sustained business success was also highlighted. The chapter touched on the issue of government policy that can also affect the position of an industry with substitutes through regulations, subsidies or other means. The theoretical foundations of entrepreneurship and small business were also highlighted.

In chapter 3 the specific theory related to the research topic will be highlighted. The chapter will cite and discuss relevant studies and thereby indicate shortcomings.

CHAPTER 3

LITERATURE REVIEW

3.1 INTRODUCTION

In this literature review, different views from different authors on the subject are reviewed, compared and contrasted. The literature review brings about deeper understanding of the subject under study, allowing the researcher to carry out relevant tests or investigation with full understanding of the subject. In this study, views and insights into the factors affecting the sustainability of companies in the mining, industry are discussed.

In this section of the studies the significant importance of the role of background characteristics of individuals in the sustainability of small, medium and micro-enterprises (small-scale mining included) according to different authors will be discussed. The economic contribution of SMMEs to the country will be reviewed from different sources. The challenges facing SMMEs including the individual's own characteristics, which contribute to their success in business (entrepreneurial success factors,) will be addressed.

According to Nieman et al (2003: 3) SMMEs constitute 97, 5% of all business in South Africa. They generate 34.8% of the Gross Domestic Product (GDP); contribute 42.7% of the total value of salaries and wages paid in South Africa, and employ 54.7% of all formal and private sector employees. It is universally accepted that a well functioning small business sector contributes to the economic and social growth of a country. It exerts a positive influence on the economies of countries particularly in the fast changing and increasingly competitive global market. SMMEs are recognised as playing a fundamental role in the advancement of prosperity in communities. The Global Entrepreneurship Monitor (GEM) undertakes annual surveys in the country (the so-called Total Entrepreneurial Activity rate, or TEA). In GEM terminology, a start-up becomes a running business when it starts paying wages and salaries (Annual Review of Small Business in South Africa, 2004:41).
In a study conducted by Driver et al (in Nieman, 2004:28) it was found that 1 in 8 South African adults are entrepreneurs as measured by the Total Entrepreneurial Activity (TEA) index.

3.2 OVERVIEW OF THE SOUTH AFRICA MINERALS INDUSTRY

South Africa's mineral industry, largely supported by gold, diamond, coal and platinum production, has made an important contribution to the national economy for more than a century (Department of Mineral and Energy: South Africa's Mineral Industry Review: 2002/2003). It has provided the impetus for the development of an extensive and efficient physical infrastructure and has contributed greatly to the establishment of the country's secondary industries.

The South African mineral industry is a well-established and resourceful sector of the economy, and has a high degree of technical expertise and the ability to mobilise capital for new development. Mining is South Africa's largest industry sector, followed by manufacturing. Other sectors, which contribute significantly to the country's economy, are oil and gas, chemicals, agriculture and tourism. South Africa is globally recognised as being a leading supplier of minerals and mineral products. According to the Department of Minerals and Energy, in 2002, about 56 different minerals were produced from 778 mines and quarries, of which 33 produced gold, 17 platinum – group minerals (PGMS), 57 produced coal and 51 produced diamonds. Minerals commodities were exported to 83 countries.

3.2.1 STRUCTURE OF THE INDUSTRY

Democratic change in South Africa during the 1990's resulted in the endorsement of the principles of private enterprise within a free-market system offering equal opportunities to all people. The State's influence within the mineral industry is mostly confined to orderly regulation and to the encouragement of equal opportunities in its mineral development.

A large sector of the population was excluded (by discriminatory policies) from fully participating in the minerals industry in the period before democracy was realised in South Africa in 1994. A White Paper setting out the official policy with regard to the exploitation of the country's minerals was released on 20 October 1998. The restructuring of the South African economy and changing local and international circumstances were taken into consideration in compiling the document and a Department of Minerals and Energy committee was assigned the task of drafting a new Bill. The Mineral and Petroleum Resource Development Draft Bill was published for public comment on 18 December 2000 with 31 March 2001 as the closing date for comments.

The draft bill seeks to address the following:

- Transformation of the minerals and mining industry;
- Promotion of equitable access to South Africa's mineral resources;
- Promotion of investment in exploration, mining and mineral beneficiation;
- Socio–economic development of South Africa; and
- Environmental sustainability of the mining industry.

In South Africa, ownership of mineral rights is currently held either by the State or the private sector. This dual ownership system is perceived by many to be an entrance barrier for new investors.
Government has stated that its long-term objective is for all mineral rights to be vested in the State, with due regard to constitutional ownership rights and security of tenure.

(a) PRIVATE SECTOR

Other forms of transformation included the consolidation of ownership through minority buy-outs and transferring primary listings (and corporate head-offices) offshore, as well as foreign resource companies purchasing South African mining assets. The most notable corporate activity during 2000 was the relocation of the primary listing of De Beers from Johannesburg to London. De Beers also sold most of its shares to Anglo and Debswana. Harmony Gold acquired Elandsrand and Deelkraal from Anglo Gold. In June 2000, Eyesizwe was granted ownership of new coal. Local junior mining companies, particularly those with black entrepreneurial participation, such as African Rainbow Minerals, moved more into the spotlight.

The Chamber of Mines of South Africa is a voluntary, private sector employers' organisation founded in 1889 – three years after gold was discovered on the then Witwatersrand. The Chamber is an association of mining finance companies and mines operating in the gold, coal, diamond, platinum, lead, iron ore, antimony, zinc and copper mining sectors. In recent years, the Chamber's role and functions have undergone substantial change in view of developments unfolding in the external environment. Today, the organisation acts as the principal advocate of the major policy positions endorsed by mining employers.

The Chamber represents the formalised views of its membership to various organs of South Africa's national and provincial governments, and to other relevant policy-making and opinion-forming entities, within the country and internationally.

Numerous smaller groups and companies also carry out mining and beneficiation activities. Not only do they contribute towards the creation of employment opportunities, but they also exploit the relatively smaller mineral deposits which may not be considered economically attractive to the larger groups. The National Small-scale Mining Development Framework established in 1999 is contributing to the development of the mining sector. The unique mechanism of the Framework was designed to assist first-time entrepreneurs in overcoming the many obstacles faced by small-scale miners. Many co-operative organisations protect and serve the interests of the smaller groups and independent operators, or specific sectors of the industry. These include the Aluminum Federation of South Africa, the South African Copper Development Association, the Ferro -Alloy Producers Association, the Engineering Industries Federation of South Africa, the Southern Africa Stainless Steel Development Association and the Aggregate and Sand Producers Association of South Africa (www.num.gov.za).

(b) BLACK ECONOMIC EMPOWERMENT MINING COMPANY

The first notable activity in the operating and developing black empowerment mining companies in South Africa was the African Rainbow Minerals (ARM) who acquired several shafts from Anglo Gold's Vaal Reefs Mine in 2001. ARM also jointly developed the platinum mine with Anglo Platinum, as well as entering into a joint venture with Harmony Gold to exploit several Free State assets acquired from Anglo Gold (www.num.gov.za).

Other black empowerment economic companies' initiatives followed:

- The empowerment mining company Khumo Bathong Holding closed a deal with Durban Roodepoort Deep, South Africa's fourth larges gold producer.
- Khumo Bathong merged with Durban Deep's Crown Gold Recoveries operations.
- Mvelaphanda Resources merged with De Beers. The two companies are jointly searching for new kimberlities, or primary sources of diamond. The joint venture will focus on the Limpopo and Mpumalanga provinces, an area for which De Beers already has a considerable database.
- Mmaku mining is also a black empowerment mining company with interests in platinum.

- Eyesiwe coal formed a joint venture with Anglo Coal, creating a new black empowerment company producing 18 million tons of coal per year.
- The De Beers diamonds company has several out-sourcing and joint venture operations.
- Harmony Gold and a black – owned mining company, African Vanguard Resources, concluded a deal for Gold explorations and mining.
- Anglo Platinum nominated a consortium headed by the black empowerment group, New Mining Corporation (NMC), as its partner in a R1.7 billion Der Brochen platinum projects. The mine is expected to produce an average of R160 000 ounces a year between 2005 and 2012.
- Anglo Coal has identified a number of reserves, which are suitable for black economic empowerment (BEE) mining ventures and is also in the process of reviewing its total base metals and industrial minerals rights database with a view to release certain rights suitable for BEE mining ventures.

According to the Department of Minerals and Energy, the database of black empowerment companies reached 72 in number by 2000 but its current official database (2003) has 44 black empowerment companies. These black empowerment-mining companies are active in a number of mineral commodities and their geographic distribution covers the entire country (www.dme.gov.za).

(c) GOVERNMENT

The State's involvement in the mineral industry is of a complementary and supportive nature, and seeks to provide and maintain:

- A legal and fiscal environment which will allow unimpeded exploration for, as well as mining, beneficiation and marketing of the country's minerals, and
- An efficient physical infrastructure including road, rail, air and harbour facilities, communications and health services, and the supply of electricity and water (www.dme.gov.za).

The Department of Minerals and Energy is responsible for the administration of the Minerals Act, 1991, which regulates the prospecting for, and optimal exploitation, processing and utilisation of minerals; provides for safety and health in the mining industry; and controls the rehabilitation of land disturbed by exploration and mining.

The office of the Director-General, the permanent head of the Department of Minerals and Energy, is located in Pretoria. The Mine Health and Safety Inspectorate of the Department

ensures the safe mining of minerals under healthy working conditions and is represented in the various provinces by Principal Inspectors.
The Energy branch promotes the optimum utilisation of energy resources.

The Minerals Development Branch (MDB) promotes the orderly and optimal mining and utilisation of mineral resources and is represented in the provinces by Regional Directors. The MDB consists of a Minerals Regulations Chief Directorate to regulate minerals development, and a Minerals Promotion Chief Directorate to promote minerals development and advice on trends in the mining industry. The latter Chief Directorate consists of a Mining Economics Directorate and a Mineral Economics Directorate (Minerals Bureau). The Bureau promotes mineral exploitation and beneficiation in South Africa. It collects, classifies and analyses mineral data in order to advise both Government and the private sector on matters related to local and international mineral-economic developments. To achieve these goals, the Bureau also disseminates mineral-related information through publications and by participating in local and international conferences.

3.2.2 SOUTH AFRICA'S MINERAL INDUSTRY STRENGTHS

South Africa's mineral wealth is found in diverse geological formations, some of which are unique and extensive by world standards. As a result of its large reserve base, South Africa is a mineral producer of note; for alumino-silicates, chrome ore, ferrochrome, PGMs, vanadium and vermiculite, the country is not only the leading world supplier, but contributes in excess of 40 percent of the World's total of these commodities. South Africa is also the foremost World producer of gold, for which its contribution is almost 17 percent. For many other commodities, namely the alumino-silicates, zirconium, titanium, manganese and ferromanganese it is one of the World's leading producers (www.dme.gov.za).

Although the existence of large reserves of a variety of minerals has been proven in South Africa, the country cannot be considered over-explored. Experts in this field generally agree that there remains considerable potential for the discovery of other world-class deposits in areas, which have not yet been exhaustively explored. There is, therefore, still ample potential for exploration programmes in certain areas. Most importantly, the country enjoys political stability and has a fundamentally sound economy. Its banking and finance infra-structure is excellent, on a par with those in most developed and developing countries, which assists global trade through a network of international links (www.dme.gov.za).

3.2.3 LABOUR SITUATION

South Africa has a sizable labour pool, although to a large extent unskilled. The Government is, therefore, actively pursuing a higher level of education, training and productivity in the nation. The labour force, whilst unionised, welcomes the in-flow of foreign investment. It is envisaged that implementation of the new minerals policy will lead to increased investment in South Africa's mineral industry, by ensuring a competitive business environment and the lowering of entrance barriers. This, and the creation of a national mineral promotion system ("one-stop shop"), furthermore, will stimulate small-scale mining and job creation. Other measures propose to intensify mineral beneficiation. The whole of the sub-continent will benefit from the anticipated improved regional co-operation.

3.3 ROLE IN THE NATIONAL ECONOMY

Mining contributed R51, 6 billion or 6, 5 percent to Gross Domestic Product (GDP) in the year 2000 and an additional estimated 15, 9 percent through associated multiplier effects. However, the contribution as a percentage of the total, has declined over the last two decades, largely due to the growth experienced in the secondary and tertiary sectors of the economy and the contraction in the gold mining industry. However, if one should add the GDP contribution of processed minerals (presently included in the manufacturing sector's GDP) to that of mining and quarrying, the impact on the national accounts will be significantly higher (www.dme.gov.za).

3.4 ECONOMIC CONTRIBUTION OF SMALL BUSINESSES (Small Scale Mining)

The economic contribution of small businesses is not only present in developing countries but also in developed countries such as the United States of America. The U.S Small Business Administration has assessed the economic impact of small businesses as follows: "As we enter the 21st century, America's 25 million small businesses continue to be a potent force in our dynamic economy. They employ more than 52 percent of the private work force. They are the principal source of new jobs in the country- more than 20 million since 1993 – and they generate more than 51 percent of the private sector gross domestic product"(www.dme.gov.za).

SMMEs are considered as good contributors to job creation. The current unemployment problem worldwide, especially in developing countries, cannot be reduced without the application of the SMMEs. Khalid (World Bank report 2001) underlies the importance of SMMEs as follows.

"Further growth and employment in developing countries is mainly dependent on small and medium enterprises (SMMEs) and services, although agriculture will remain dominant in some regions. Their success depends on combining entrepreneurship with innovativeness, entering relatively young industries."

The macro Economic Policy of South Africa referred to as Growth, Employment and Redistribution (GEAR) also stresses the contribution of SMMEs in job creation and income generation. The promotion of small, medium and micro enterprises is a key element in government's strategy for employment creation (GEAR, 1996).

The contribution of SMMEs in changing the lives of people starting from the daily basic needs to contributing to the overall development of a country is clearly understood at individual and government level. However, there are many challenges facing this sector making it difficult to meet the targets. Apart from their contribution to job creation, there are various problems and challenges to the sustainability of SMMEs.
Although the new industrial policy of South Africa framework describes SMMEs as an important economic growth path, the failure rate among small businesses remains as high as 80%' (Business in Africa, 2001). Research carried out in South Africa blames the failure rate on the absence of "managerial know-how, environmental factors including AIDS, crime, globalization, inflation and high interest rates".

The research warns that SMMEs will face growing competition as South Africa is increasingly integrated into the global, electronic economy. The Godisa News Letter (2004) summarises the survival rates of SMMEs in referring to the research done by the European Union as follows: "With the widely accepted estimation that 9 in 10 SMMEs in South Africa fail within the first two years of operation, it is no wonder the SA government has been considering different strategies for improving the survival rate of SMMEs whilst at the same time improving productivity, access to technology, and the overall strengthening of SMMEs within the SA economy.

Research conducted by the European Union, has concluded that one of the leading strategies to enhance the overall survival rate of SMMEs is by means of business incubation. The study commissioned by the EU a few years ago, indicated that the survival rate of firms reared in an incubator environment was significantly higher than the business success rate amongst the wider SME community. In fact the research furthers Cooperation and Development (OECD) countries, the survival rate of incubated firms range from approximately 80% to 85%."

The research also indicated that approximately 90% of all start-ups set inside a business incubator are still active three years later, and the public cost creating jobs inside incubators was low compared to other public means and programmes. In developing countries incubation survival rates can also be high, and tend to rank above 85% in countries with strong support from the government and tight links with the university/tertiary system. The formations of business incubators are a few initiatives undertaken in the world to promote and support the development of small to medium enterprises. Both developed and developing countries universally recognize the role of SMMEs in growth and development. The government of South Africa has also embraced the incubation idea along with its other instruments and programmes by defining policy for the development and support of SMMEs through a socially accepted model.

According to Maythan (Enterprise, 2004:65) one of the key challenges for SMMEs is to minimise the number of new business failures. At the moment South Africa's failure rate is the highest among its peer countries. "Unfortunately in South Africa a large number of Small, Medium and Micro Enterprises fail during their early years of operation" according to Merwe (in Nieman, et al 2003: 32). It is also stated that the largest percentage of small businesses failed during the first two years of existence due to cash flow problems that arise because they could not manage growth. There are also other challenges facing SMMEs such as access to markets, access to appropriate technology and access to resources – especially human resources.

Access to appropriate finance is also a major constraint in the successful development of SMMEs in South Africa and of course in most developing countries. Many creative ideas are not developed into viable new ventures due to lack of finance. The government of South Africa has designed incentives, subsidies and schemes that have improved SMMEs access to finance through the DTI and Khula Enterprise Finance. However, a significant number of SMMEs are still not able to access affordable start – up and expansion finance.

The reasons for such problems are summarized as follows:

- Risk aversion of the banking sector towards SMMEs. SMMEs are traditionally seen as high-risk borrowers. The high number of SMMEs business failures exacerbates this view.
- There is a decline in micro-finance institutions (MFI). Only a few are providing finance to SMMEs.

- Inadequate funding proposals and business plans. Proposals and business plans are not researched, prepared and presented properly.

The other major challenge facing SMMEs is the absence of sustainable markets for their products and services. They produce and offer services that do not have ready markets. Most entrepreneurs, especially the previously disadvantaged ones, start with other people's concepts and tend to follow the majority (Nieman et al, 2004:33). They think one idea that worked in the past will also work for them. They do not segment their markets, analyse customer demand, and know their competition or interpret trends. SMMEs are also faced with the challenge of appropriate technology. It is a big challenge for SMMEs frequently to upgrade their operational and production equipment and stay competitive in the market.

The other very important challenge that SMMEs are facing is a lack of appropriate manpower for their business. Human resources are widely acknowledged as being "the most precious asset of any business". Issues involved in human resource management include addressing the skills, attitudes and expectations of employees and of the entrepreneurs themselves. It is the entrepreneur who has to gather and mobilize the other production resources to create a new business venture or to change the direction of an existing firm (Nieman and Bennett in Nieman et al, 2004: 34). Entrepreneurs might have excellent ideas but if they fail to manage those ideas, or people in the business, it will be difficult to be successful. This will lead to the common conclusion that not all managers are good leader entrepreneurs and not all entrepreneurs are good managers or leaders. Entrepreneurs, as the drivers of the business, need to know and address the expectations and attitudes of their employees.

It means most of the success of any business or SMME revolves around the entrepreneur himself/herself. This brings one to the core concept of this research. However, apart from all these factors, the main question is whether the personal traits and characteristics of the entrepreneur himself/herself play a role in the success/failure of a business.

Dr.Ray Laferla, the Chief Executive Officer of Integrated Human Dynamics, a clinical and occupational psychologist, believes that there are personal attributes that contribute to the success/failure of entrepreneurs. Successful entrepreneurs, like other winners in all walks of life, share many common attributes. The attributes include confidence, trustworthiness, positive attitudes, focused and goal and action oriented (Succeed, Nov/Dec 2004). To

generalise as to which people become successful in business and which people face failure, is very difficult. There is no defined entrepreneurial profile (Longnecker et al, 2003:21). These words give encouragement to any one who wishes to start one's own business. However, it is also widely accepted that there are some common qualities among entrepreneurs that contribute to their success (Longnecker et al, 2003: 21).

3.4.1 THE BACKGROUND AND CHARACTERISTICS OF INDIVIDUAL ENTREPRENEURS (SUCCESS FACTORS.)

Successful entrepreneurs have certain entrepreneurial success factors or personal characteristics.

- **CHILDHOOD FAMILY ENVIRONMENT**

Nieman et al (2004:29) also accept the contribution of background characteristics of individuals for the success of entrepreneurs in business, as, for instance, if one is brought up in an entrepreneurial family environment. The childhood family environment contributes significantly. Entrepreneurs have at least one parent who was (or still is) in business. Entrepreneurship is best learned through experience and teachers may be far less likely to be able to teach what is required to be an entrepreneur than, for example, entrepreneurial parents. The informal learning gained from family members can play a key role in developing entrepreneurial capacity.

- **EDUCATION**

Educational level is seen as one of the most significant barriers to entrepreneurial activity. A higher level of education is associated with a higher level of entrepreneurial activity and vice versa. As Driver (in Nieman et al, 2004:29) outlined, there are research findings about the importance of education.

According to the study a matriculation level education increases one's capacity to get involved in entrepreneurial activities. In addition, tertiary education increases the durability of entrepreneurial activity.

- **AGE**

One practical question that comes to everyone's mind is what is the right age at which to become an entrepreneur or owner of a business. There is no simple answer to this question. According to the study done by Driver (in Nieman et al, 2004:29), the highest number of entrepreneurs have worked for someone else before starting their own business.

Most business requires some background knowledge. It is also important to build financial resources in order to make the necessary investments. In general, a certain amount of time

is also important in order to gain experience and financial resources (Longnecker et al, 2003:20)

"Through there are no hard and fast rules concerning the right age for starting a business, some age deterrents do exist"(Longnecker et al, 2003:20). Young people are discouraged from entering entrepreneurial careers by inadequacies in their preparation and resources. On the other hand older people have family, financial, and job commitments that make entrepreneurship seem too risky. They may have acquired interests in retirement programmes or achieved promotions to positions of greater responsibility and higher salaries (Longnecker et al, 2003:20).

According to Longnecker et al (2003:20) the ideal time for entrepreneurship appeared to lie somewhere between the 20s and mid 30s, where there is a balance between preparatory experiences on the one hand and family organisation on the other hand. Research conducted by Longnecker (2003:20) shows the highest percentages start-ups is in the 25 – 35 years age group. This doesn't mean all start-ups are under this age group and there are some exceptions. Some teenagers start their business when they become excited by the prospects of entrepreneurship.

- **LOCUS OF CONTROL**

Locus of control refers to the extent to which a person believes that his/her behaviour directly influences the consequence of their action
(Smith and de J Cronje, 1992:273). The extent, to which a person believes therefore, indicates that certain individuals believe that they can control whatever they do.

Some individuals are confident of their ability to meet the challenges confronting them. This was described by the psychologist J.B Rotter as an internal locus of control, a feeling that success depends on one's own efforts. In contrast, an external locus of control reflects an attitude of dependence on luck or fate for success. These feelings of individuals affect their success (Longnecker et al, 2003: 21).

Getting independence and financial freedom by opening one's own business is one of the primary objectives of individuals. The process of starting a business, proper management of the business for growth and sustainability require the individual's ceaseless effort. Managing competition, customer satisfaction and financial and other constraints are challenging practices in business. For the business to grow the determination and

commitment of the individual owners is very important. The presence of enough start-up capital or availability of markets cannot be a guarantee for one's business success.

- **NEED FOR INDEPENDENCE**

There are some people who do not want to be tied up with rules and regulations. They are not comfortable being under others' supervision and order. They need their own freedom and want to be their own bosses. These are some of the qualities of entrepreneurs. It has been common in some countries to include foreign assistance in their annual budgets for individuals who were restricted from getting money, being employed or starting their own business on their own if there is already some one taking care of them. This has hindered, in one way or the other, the effort towards independence. There is the problem of a dependency syndrome and might be difficult to push these types of people into independence.

- **MOTIVATION**

This is an entrepreneurial characteristic that pushes an individual to excel from within. McClelland (in Nieman et al, 2004:30) states that entrepreneurs have a very high need for achievement when compared with other individuals who are not entrepreneurially inclined. Nieman and Bennett (in Nieman et al, 2004:30) agree that entrepreneurs are self-starters who are driven internally by a strong desire to compete against self-imposed standards and to pursue and attain challenging goals.

- **RISK TAKING**

This is the readiness to accept the negative consequences that comes as a result of one's actions. Some people are ready to face any consequence that is associated with failure. These people are also rewarded with investment returns and success.

Risk taking involves much more than just financial resources that will be lost if the venture fails; it can also include social and personal risks. All entrepreneurs face personal risks because they might lose valuable time with their families. Entrepreneurs do not really have 9 to 5 jobs, but rather, 24-hour jobs, especially when their businesses are in the start-up phase. Entrepreneurs are less protected from business failure than their employees and investors are and liquidation can result in financial ruin. Moreover, they will have to face the social stigma associated with failure as well as the personal distress of letting down investors, employees, clients, and their families.

3.5 CONCLUSION

The chapter discussed relevant information about the South African mineral industry. The government's influence within the mineral industry is confined mostly to orderly regulation and to the encouragement of equal opportunities in its mineral development. The private sector was also discussed especially in the form of smaller groups and companies carrying out mining and beneficiating activities. The South African mineral industry's strength was also highlighted. The chapter also dealt with some of the studies and discussions that are related to the research topic. The economic contribution of small medium and micro enterprises challenges and the success factors of entrepreneurs have also been entertained.

In chapter 4 the statement of the problem will be addressed and will source information about where the statement of the problem originated. The chapter will also discuss sub-problems and formulate objectives based on the problem.

CHAPTER 4

PROBLEM STATEMENT AND OBJECTIVES

4.1. INTRODUCTION.

This chapter will look at the problem statement and sub-problems of the research. A list of propositions is given here and the research questions are given at the end of this section. Objectives will also be formulated.

4.2 STATEMENT OF THE PROBLEM

In this study focus will be on the challenges facing companies in the mining industry and their sustainability. Unfortunately these small-scale mining operations fail during their early stages of business life, usually during the first two years of operations. These individuals do not become independent but rather continue to be burdens on their families, government and non-governmental organisations. Enhancing the survival rate of these small-scale mining operations has been a great challenge. The question of sustainability and its challenges is therefore raised in the context of the problems in the mining sector, and this study seeks to determine the role, what individual's background characteristics play in this failure.

Entrepreneurship is distinguished in chapter two and three as one of the main factors of production on which a country relies to satisfy its needs. Entrepreneurs are those individuals in society who take the lead as well as the risk in mobilizing the other production factors (natural resources, human resources and capital) in specific combinations to produce products and services to their communities. The key role that an entrepreneur plays as one of the factors of production is often misjudged. Although each of the production factors plays a vital role, it is the entrepreneur who mobilises them to set the process of need satisfaction in motion and to keep the process going. This is the case in countries like Japan, the U.S.A and Europe. The opposite is true in countries that lack entrepreneurial economies such as those of the former Soviet Union and countries in eastern Europe, Africa and even South Africa where entrepreneurs are being smothered by government and a few business conglomerates (Motlatla et al, 2000:490)

This is an important dimension for policy makers, as a high rate of business failures can be costly to the economy in terms of unutilised or utilised investment, and its effect on the entrepreneur's own financial and of course, to creditors of the company. In addition, the

benefit to the economy of start-up business is relatively small; research by the General Entrepreneurship Monitor (GEM), suggests that the most significant benefit to the broader economy accrue when small enterprises begin to grow rapidly and start to increase employment and production.

4.2.1 RATIONALE TO THE PROBLEM

The purpose of the study is to investigate the factors that affect the sustainability of small-scale companies in the mining industry and success/failures of SMMEs. Whatever the background and personality of these mining companies, government, private organisations and donors give funds to different people and companies to start their own businesses. Many different organisations are dedicated to change the lives of the jobless or the working poor, through establishing small-scale mining operations.

However, the projects are generally not seen to be successful and sustainable according to plans of funding organisations, which are discouraged from continuing their assistance. A study such as this is necessary to provide information, which can be used by government, private, and donor organisations in policy design and implementation procedures, especially with regard to profiles of individuals for whom projects are to be considered.

The small-scale mining operations play a vital part in sustaining the economies of rural towns in the North West province especially around the Bophirima region. The rural towns include Wolmaranstad, Christiana, Bloemhof and Schweizer-reneke. Small-scale mining operations in alluvial diamonds contribute about 80% to the economies of these towns (Mining Weekly Magazine 2006-03:13). The study recognizes that in addition to the Mineral and Petroleum Resources Development Act it is costly for small-scale miners to complete the environmental-impact assessments required, which costs between R60 000 and R80 000. The sustainability of the mining companies is very important because among other factors every worker has an average of seven dependents.

The study recognises the importance of employment and the role of mines in this regard. If jobs are not sustained in mines, it does not only result in income lost, but also the consequences of households losing their livelihood, regions losing purchasing power, workers facing prolonged unemployment, shrinking of local economies and increasing crime.

Various donor (funding) organisations especially in African countries are dedicated to change the lives of the jobless or the working poor, through establishing SMMEs. The number of these orgnisations and SMMEs established vary from country to country. However these SMMEs are generally not seen to be successful and sustainable according to the plans of donor organizations. According to experience, research carried out and books published, most of these SMMEs fail (Motlatla et al, 2000:490).

In developing countries, including South Africa, the high failure rate of small businesses is a great challenge. Individuals, especially disadvantaged groups like orphans, the disabled and woman from low income (survivalists) to medium income (medium enterprises) get assistance or donations from government and non- governmental charity organisations. This is aimed at relieving employment problems by creating jobs that can provide individuals with better quality of life. These low and medium income people use the donated funds as start-up capital or for extension of an existing business. Unfortunately these businesses fail during their early stage of business life usually during the first two years of operation. Those individuals do not become independent but rather continue to a burden on their families, government and other non-governmental organisations. Enhancing the survival rate of these SMMEs has been a great challenge.

One of the fundamental challenges confronting the previously disadvantaged entrepreneurs is a background characteristic. People are not equipped with proper knowledge, experience and skill. Despite the fact that government, NGOs and organisations support SMMEs, the sustainability rate is not satisfactory. According to information from the department of Economic Development and Tourism, North West province, more than 75% of SMMEs, which were founded and started business in 2002, have collapsed (failed). According to the data, SMMEs that are founded by the department and started business in 2002, only five of the twenty are currently operational. From the data it is tempting to see a trend emerging that the rest of the projects will also fail if the duration of running their business exceeds 2 years similar to the 2002 ones (DME Publications: Review of SMMEs, 2004).

4.3 RESEARCH OBJECTIVES

The main objective of the study is to determine factors affecting sustainability of small-scale mining companies in the Bophirima Region.

The sub-objectives are:

- To determine the role of education in the success/failure of companies in the mining sector.

- To establish the role of work experience in the success/failure of companies in the mining sector.
- To determine the role of entrepreneurial characteristics in the sustainability of companies in the mining sector.

4.4 CONCLUSION

The chapter looked at the problem statement and sub-problems of the research as well as the objectives.

In chapter five the justification for the methodology and also research procedures including methods of analysis, and statistical techniques will be entertained. Ethical considerations and limitations will also be discussed.

CHAPTER 5

RESEARCH DESIGN AND ANALYSIS

5.1. INTRODUCTION.

The purpose of this study was to investigate and analyse the factors that affect the sustainability of companies in the mining sector. The study covers the domestic market for the mining companies around Bophirima region. The methodology used in the research is covered in detail in this chapter. The chapter also spells out the research design, the strategy used, the sampling method and data collection methods adopted by the researcher. The study also seeks to justify the procedures employed in the research.

5.2. RESEARCH DESIGN.

Cooper & Schindler (2003:146) define research design "as the plan and structure of investigation so conceived as to obtain answers to research questions." They further explain that "the plan is the overall scheme or program of the research, which includes the outline of what the investigator, will do from writing the hypothesis and their operational implications for the final analysis of data." A structure is the framework, organisation, or configuration of the relations among variables of a study (Cooper & Schindler 2003). Cooper & Schindler (2003) put forward the notion that a research design expresses both the structure of the research problem and the plan of the investigation used to obtain empirical evidence on relations of the problem.

Cooper &Schindler (2003) further make a deduction on the above definition and summarise the essentials of the research design as follows:

- The design is an activity-and time based plan.
- The design is always based on the research question.
- The design guides the selection of sources and type of information.
- The design is a framework for specifying the relationships among the study's variables.
- The design outlines procedures for every research activity.

Thus the design provides answers for questions such as these: What techniques will be used to gather data? What kind of sampling will be used? How will time and cost constraints be dealt with?

5.2.1. DEGREE OF RESEARCH QUESTION CRYSTALLISATION.

Exploratory studies tend towards loose structures with the immediate objective of discovering future research tasks, whereas the formal study begins with a hypothesis or research questions and involves precise procedures and data source specifications (Cooper & Schindler, 2003). This study has clear research questions as shown in chapter 4 and sources of data are specified, and as such it is a formal study.

5.2.2. METHOD OF DATA COLLECTION.

Monitoring includes studies in which the researcher observed the activities of the subject and the nature of some material without attempting to elicit responses from anyone, yet in interrogation/communication study, the researcher questioned the subjects and collected their responses by personal or impersonal means (Cooper & Schindler, 2003). This study entailed both questioning and interrogating the subjects, for the purpose of collecting data from them.

5.2.3. CONTROL OF VARIABLES.

In the experimental design, the researcher attempts to control and/or manipulate the variables in the study, whereas with an ex post facto design, the investigators have no control over the variables in the sense of being able to manipulate and influence their outcomes. In this study the variables were not controlled and hence the research design is categorised as an ex post facto.

Table 5.1 shows the descriptors of the research design used to guide the selection of a research design method.

TABLE 5.1: DESCRIPTORS OF RESEARCH DESIGN

CATEGORY	OPTIONS	SELECTION
The degree to which the research question has been crystallized.	• Exploratory study • Formal study	X
The method of data collection.	• Monitoring • Interrogation/Communication	X
The power of the researcher to produce effects in the variables being studied.	• Experimental • Ex post facto	X
The purpose of the study	• Descriptive • Causal	X
The time dimension	• Cross-sectional • Longitudinal	X
The topical scope, breadth and depth, of the study	• Case • Statistical study	X
The research environment	• Field setting • Laboratory research • Simulation	X
The participants' perceptions of research activity	• Actual routine • Modified routine	X

Adapted from Cooper & Schindler (2003:147)

5.2.4. THE PURPOSE OF THE STUDY.

With descriptive studies the researcher is concerned with finding out, who, what, where, when or how much, and causal studies try to explain a relationships among variables (Cooper & Schindler, 2003). In causal studies the researcher investigates whether one variable causes or determines the value of another variable (Mc Daniels & Gates, 2001). In a causal study an independent variable is presumed to cause an effect on the dependent variable. This research study is a causal study since it investigates the factors affecting the sustainability of small scale mining companies.

5.2.5. THE TIME DIMENSIONS.

A research study can either be a cross-sectional study or longitudinal study, depending on the time frame of that study. Cross-sectional studies are carried out once and represent a snapshot of events (Cooper & Schindler, 2003). This study was carried out at one point in time, so it is a cross-sectional as opposed to a longitudinal study which has to be repeated over an extended time as indicated by Cooper & Schindler (2003).

5.2.6. THE TOPICAL SCOPE.

Statistical studies are distinct from case studies in that they try to capture a population's characteristics by making inferences from the sample characteristics. On the other hand a case study places more emphasis on a full contextual analysis of fewer events or conditions and their relations (Cooper & Schindler, 2003).

This study is based on a sample of a population and makes inferences about the population from the results of the sample. Therefore this is a statistical study.

5.2.7. THE RESEARCH ENVIRONMENT.

A research design can be done under field conditions, laboratory conditions or simulation. In the field conditions the research is done under actual environmental conditions. Laboratory conditions are manipulated conditions, whereas a simulation tries to replicate the essence of a system or process (Cooper & Schindler, 2003). This is a field study as it was carried out under the actual environment.

5.3. SAMPLING DESIGN.

In choosing sampling as opposed to studying the population, four factors were considered be adequate to justify the procedure:

- Cost of the study.
- Greater accuracy of results.
- Greater speed of data collection.
- Availability of population elements.

There are some economic advantages in taking a sample rather than investigating the whole population. If sampling errors are eliminated, the study can produce accurate results without high cost implications. Effective sampling has the possibility of better testing, and more

thorough investigation of missing information (Cooper and schindler 2003). Furthermore sampling enables the investigator to aptly supervise the elements being studied and is able to process information faster than is possible with the population (Cooper and Schindler, 2003). They further assert that the speed of execution in sampling reduces the time between recognition of an information need and the availability of information. In terms of an infinite population, sampling can be the only process possible.

5.3.1 PROBABILITY SAMPLING.

A probability sample is defined as that in which every element of the population has a non-zero probability of selection, whereas a non-probability sample, includes elements of the population that are selected in a non- random manner.
Mc Daniels (2001) suggests the following advantages that probability techniques offer over non-probability techniques and it was those advantages, which influenced its selection in this study. The advantages, which were considered, are given below:

- The researcher can be sure of obtaining information from a representative cross- section of the population.
- Sampling error can be computed.
- The survey results can be projected to the total population.

5.3.2 SAMPLING TECHNIQUE.

Cooper and Schindler (2003) indicate that there are five probability-sampling designs that a researcher can use. These are given as simple random, stratified, and multi-phase, systematic and cluster sampling. The use of each is dependent on a number of factors: such as the structure of the market, variability of characteristics of the elements in the population and geographic spread of the population under investigation. Cooper & Schindler (2003) have identified the advantages and disadvantages of each design, which can influence the selection of each method. Table 5.2 shows comparisons of each design. In this study simplicity and costs effectiveness were major considerations for the selection of systematic sampling. The researcher is of the opinion that the disadvantages of systematic sampling technique did not apply to the study.

5.3.3 SAMPLE SIZE.

The sample size was determined after consideration of the factors highlighted by Cooper and Schindler (2003:190) who contend that the accuracy of the sample is influenced by the following factors:

- The variance within the population.
- The desired precision of the estimate.
- The interval range.
- The confidence level in the estimate.
- The number of sub-groups of interest in the estimate.
- If the calculated sample size exceeds 5% of the population, sample size may be reduced without sacrificing precision.

The population constituted the small-scale mining companies around the Bophirima region of the North West Province. The list from the Department of Minerals and Energy (North – West Province) was used in conjunction with the local register in the Bophirima region. After updating the list, it was found that, of the entire market, 78 were small-scale miners.

Table 5.2 below illustrates a comparison of probability sampling designs. The type of designs includes a simple random, systematic, stratified, cluster and multi-phase.

Table 5.2: COMPARISON OF PROBABILITY SAMPLING DESIGNS.

Type	Description	Advantages	Disadvantages
Simple random	Each population element has an equal chance of being selected in the sample. Sample drawn using random number/ table	Easy to implement with automatic dialling (random digit dialling) and with computerised voice responses	Requires a listing of the population elements takes more time to implement. Use larger sample sizes. Produces larger errors. expensive
Systematic	Selects an element of the population at the beginning with a random start and following the sampling fraction selects every *kth* element.	Simple to design. Easier to use than simple random. Easy to determine sampling distribution of mean. Less expensive than simple random	Periodically with the population may skew the sample and results. If the population list has a monotonic trend, a biased estimate will result based on the start point.
Stratified	Divides population into sub-population and uses simple random on each stratum. Results may be weighted and combined	Researcher controls sample size in the strata. Increased Statistical efficiency. Provides data to represent and analyse sub-groups. Enables use of different methods in strata.	Increased error will result if Sub-groups are selected at different rates. Expensive if strata on the population have to be created.

Cluster	Population is divided into internally different sub-groups. Some are randomly selected for further study.	Provides an unbiased estimate of the - population parameters if properly done. Economically more efficient than simple random. Lowest cost / sample. Easy to do without a population list.	Often lower statistical efficiency (more error) due to sub-groups being similar rather than different.
Multi Phase	Process includes collecting data from sample using a previously defined technique. Based on the information found, a sub- sample is selected for further study.	May reduce costs. First stage results in enough data to satisfy or cluster the population	Increased costs if indiscriminately used.

Source: Cooper and Schindler (2003), Business Research Methods New York: McGraw Hill.

The study utilised the systematic sampling from Table 5.2 as it is simple to design and easier to use than simple random. It is also less expensive than simple random.

5.3.4. PROCEDURE FOR SAMPLING

Two register lists were obtained from the Department of Minerals and Energy and Bophirima region databases. The lists were used to compare the accuracy of information and to update the information where necessary. At the end of the exercise there were 78 small-scale mining companies who were still active. People whose names appeared under each business name was identified as a contact and was selected and classified according to the

addresses, which indicated their geographic area, e-mail address, telephone and fax-numbers. The systematic sampling technique was applied by selecting every second company name in the list provided by the Department of Minerals and Energy (North-West Province) together with the list from the offices of the Bophirima district municipality.

5.4. PRIMARY DATA COLLECTION METHOD.

A questionnaire was distributed to the owners of the small-scale mining companies for completion.

5.4.1 THE QUESTIONNAIRE.

The researcher utilised a widely used measurement instrument, namely a questionnaire. It is contained in annexure 1 together with the covering letter. The measurement covered thirty-seven questions. In order to meet objectives as set out in this dissertation, a carefully planned questionnaire was designed and distributed for completion by members of the identified sample group. The sampling was therefore carried out through the collation of data as contained in the questionnaires that were completed by owners of small-scale mining companies. The close-ended questions were formally structured in the form of a five point Likert scale, complimented by appropriate guidelines regarding the procedure to be followed. A questionnaire comprising a choice of five indicators, being: "Strongly disagree; Disagree; Don't know; Agree and Strongly agree." The respondents had to choose one answer per question. The questionnaire distributed was only meant for research purposes, and the responses were not to be distributed to anyone else. The confidentiality was honoured because the respondents were not asked to put their names or any identification on their responses.

5.4.2 ELECTRONIC MAIL SURVEY.

Primary data was collected through electronic mail surveys administered mainly through e-mails and fax. The advantages according to Cooper & Schindler (2003) are that the costs are lower than the personal interviews. People whose names appeared under each business name was identified as a contact and was selected and classified according to the addresses, which indicated their geographic area, e-mail address, telephone and fax-numbers. This method is also recommended when trying to access people who would be difficult to access if one were using personal interviews. An example of such includes senior executives of companies. Electronic mail surveys offer greater anonymity and most respondents would not want their identity to be known. This method allows respondents to answer the questions without any fear of reprisals. The main disadvantage with electronic mail survey is the non-

response error. The researcher followed up all non-respondents with fresh questionnaires until the required number of responses was achieved.

5.5. SECONDARY DATA COLLECTION.

In developing the literature review for this study there was a need to read more about the subject under investigation. Secondary sources were consulted in order to improve knowledge of the subject under review. In compiling the literature review, a number of sources were used. The major sources of information were articles from journals, textbooks, business reports and articles from the Internet.

5.6. DATA ANALYSIS METHOD.

In analysing results, the researcher sought assistance from The North West University's Graduate School of Business and Government Leadership who have the equipment and expertise to handle the kind of data collected. The information received from respondents was coded and loaded into the computer software known as Statistical Package for the Social Science (SPSS). The software then calculates mean scores according to each of the 37 statements in the questionnaire. That information was then used for doing frequency distribution tables, bar charts, table and bar graphs.

Statistical Package for the Social Science (SPSS) was used because of its simplicity. The statistical method to be used in this study to analyse data emanating from the survey is descriptive statistics. This form of data analysis is used to describe, explain and explore the relationship among variables. The research results culminate in an appropriate discussion on the outcome of the study, which is complemented by relevant suggestions and recommendations for the future.

5.7 CONCLUSION

The chapter dealt with the research design that included sampling technique, measuring instrument, questionnaire, survey methods, data collection method and statistical methods to be used.

The next chapter will present the results of the study.

CHAPTER 6
RESEARCH RESULTS

6.1 INTRODUCTION

In this chapter the results of the empirical investigation collected through the questionnaire, completed by various small-scale mining companies are analyses and interpreted. The questionnaire was intended to examine the factors affecting the sustainability of small-scale mining companies.

For purposes of determining the extent to which background characteristics of individuals contribute to the success/failure of small-scale mining companies, the research design used in the study involved the descriptive method. The first section analyses the biographical data that encapsulates the influence of the age, gender and racial groups with regard to the answering of the questionnaire in a tabular manner. The second section of the analysis examines the statistical fit of the data. As part of the discussion regarding the statistical outcomes of the questionnaire, the aims have been sub-divided into different research questions and the outcomes of these serve as an attainment of the objectives, as discussed in previous chapters in this study. The tables that provide information gathered from small-scale miners substantiate the findings as interpreted and analysed below. Although participants were anonymous, details like sex, race and gender were provided in order to highlight their unique group differences and needs.

6.2 SAMPLE

A list of small-scale miners received from the Department of Minerals and Energy was used for systematic sampling of participants of the questionnaire. Forty from a total of seventy-eight small-scale miners located in the Bophirima District in the North West Province were selected and only thirty-five responded. Participants are characterised by a race population of fourteen whites; ten blacks; eight coloured and three Indians. Across racial boundaries, gender of participants is ten female and twenty-five males.

The total number of participants in the age groups is: below thirty years: 17; between thirty-one and fifty years: 12 and above fifty years: 6.

6.2.1 BUSINESS COMMUNITY'S RESPONSE COMPOSITION BY RACE

The questionnaire was distributed to 40 participants, of which 35 responded. The participants included ten blacks, fourteen whites, eight coloureds and three Indians. Details are in table 6.2.1 below.

TABLE 6.1 BIOGRAPHICAL DATA OF RESPONDENTS - RACE

	Frequency	Percent
Black	10	28.6
White	14	40
Coloured	8	22.9
Indian	3	8.6
Total	**35**	**100**

Whites constitute 40% of the participants compared to about 9% of Indians, and the majority was Blacks (29%).

6.2.2 BUSINESS COMMUNITY'S RESPONSE BY AGE

Table 6.2 contains the distribution by age.

TABLE 6.2 BIOGRAPHICAL DATA OF RESPONDENTS - AGE

	Frequency	Percent
Below 20 years	3	8.6
20 – 30 years	14	40.0
31 – 40 years	7	20.0
41 – 50 years	5	14.3
Above 50 years	6	17.1
Total	**35**	**100**

52% of owners of small scale mines are older people (31 years and above).

6.2.3 BUSINESS COMMUNITY'S RESPONSE COMPOSITION BY GENDER

Nearly 72% of the participants are males, and the details are contained in Table 6.3.

TABLE 6.3 BIOGRAPHIC DATA OF RESPONDENTS - SEX

	Frequency	Percent
Male	25	71.4
Female	10	28.6
Total	**35**	**100**

The 10 females indicate that the industry is male dominated.

6.2.4 ENTREPRENEUR ORIENTATION

One out of 35 participants does not consider him/herself to be an entrepreneur as depicted in Table 6.4.

TABLE 6.4 ENTREPRENEUR ORIENTATIONS

	Frequency	Percent
Disagree	1	2.9
Don't know	3	8.6
Agree	31	88.6
Total	**35**	**100.0**

88.6% of small-scale miners are convinced that they are entrepreneurs.

6.2.5 CONDUCTING BUSINESS AS A SMALL-SCALE COMPANY

Nineteen out of 35 respondents have been conducting their businesses for more than three years compared to 16 with less than three years experience (Table 6.5).

TABLE 6.5 CONDUCTING BUSINESS AS A SMALL-SCALE COMPANY

	Frequency	Percent
Less than 6 months	9	25.7
More than 1 year but less than two years	2	5.7
Less than 3 years but more than 2 years	5	14.3
More than 3 years	19	54.3
Total	**35**	**100.0**

- About 54% of small scale miners have been running their businesses for more than three years.

6.2.6 FINANCIAL SOUNDNESS OF BUSINESS

About 11 percent of participants do not think that their businesses are financially sound, compared to 17percent that do not know.

TABLE 6.6 FINANCIALL SOUNDNESS OF BUSINESS

	Frequency	Percent
Disagree	4	11.4
Don't know	6	17.1
Agree	25	71.4
Total	**35**	**100.0**

- Twenty-five out of 35 small-scale miners think that their businesses are financially sound enough to continue for at least another year.

6.2.7 SOURCE OF FUNDING AS START-UP CAPITAL FOR BUSINESS

About 54% of small-scale miners used their own funds as start-up capital for their businesses as illustrated in Table 6.7.

TABLE 6.7 I UTILISED MY OWN SOURCE OF FUNDING AS A START-UP CAPITAL FOR MY BUSINESS

	Frequency	Percent
Yes	19	54.3
No	16	45.7
Total	**35**	**100.0**

- Sixteen out of 35 small-scale miners have not funded their businesses from own capital.

6.2.8 LEVEL OF QUALIFICATION

About 69% of small-scale miners do not have qualifications beyond matric. Nearly 26% of them do not have matric at all, as shown in Table 6.8.

TABLE 6.8 MY LEVEL OF QUALIFICATIONS

	Frequency	Percent
Partially finished scholastic education	9	25.7
High School	15	42.9
Certificate	8	22.9
Diploma	3	8.6
Total	**35**	**100.0**

- Qualifications beyond high school have been obtained by about 32% of small scale miners.

6.2.9 TRAINING TO CONDUCT THE BUSINESS.

Twenty-five (71%) out of 35 participants were trained to conduct the mining businesses they are currently involved in as depicted in Table 6.9

TABLE 6.9 TRAINING TO CONDUCT THE BUSINESS.

	Frequency	Percent
Disagree	9	25.8
Don't know	1	2.9
Agree	25	71.4
Total	**35**	**100.0**

About 92% of participants have specific strategies for conducting the businesses in which they are currently involved. Nearly 9% of participants do not have plans and strategies (see Table 6.10).

6.2.10 SPECIFIC PLAN AND STRATEGY FOR CONDUCTING THE BUSINESS

TABLE 6.10 SPECIFIC PLAN AND STRATEGY FOR CONDUCTING THE BUSINESS

	Frequency	Percent
Disagree	3	8.6
Agree	32	91.5
Total	**35**	**100.0**

6.2.11 SUPPORT AND ASSISTANCE FROM GOVERNMENT/DONORS

About 54% of participants do not get support and assistance from government/donors to conduct their businesses. This is shown in Table 6.11.

TABLE 6.11 SUPPORT AND ASSISTANCE FROM GOVERNMENT/DONORS.

	Frequency	Percent
Disagree	19	54.3
Agree	16	45.8
Total	**35**	**100.0**

6.2 12 INTERNAL CONTROLS TO SAFEGUARD BUSINESS

Thirty-one (88%) out of 35 participants have a sound system of internal control to safeguard their businesses. One participant does not have a sound system of internal control while three participants do not know (see Table 6.12).

TABLE 6.12 SYSTEMS OF INTERNAL CONTROLS

	Frequency	Percent
Disagree	1	2.9
Don't know	3	8.6
Agree	31	88.5
Total	**35**	**100.0**

6.2.13 FINANCIAL RECORD KEEPING

Twenty-six (74%) out of 35 participants have a sound system of financial record keeping, and nine participants do not as depicted in Table 6.13.

TABLE 6.13 FINANCIAL RECORD KEEPING

	Frequency	Percent
Disagree	9	25.7
Agree	26	74.3
Total	**35**	**100.0**

6.2.14 EXPERTISE IN KEEPING OWN RECORDS

Nearly 60 percent of participants have knowledge and expertise in keeping their own records. About 29 percent of participants do not , while nearly six percent of participants do not know whether they have the knowledge and expertise (see Table 6.14).

TABLE 6.14 EXPERTISE IN KEEPING OWN RECORDS

	Frequency	Percent
Disagree	10	28.6
Don't know	2	5.7
Agree	23	65.7
Total	**35**	**100.0**

6.2.15 MEMBERS OF MY FAMILY ARE SUCCESSFUL ENTREPRENEURS

About 54 % of participants have a background of successful entrepreneurs in their families (see Table 6.15).

TABLE *6.15* MEMBERS OF MY FAMILY ARE SUCCESSFUL ENTREPRENEURS

	Frequency	Percent
Disagree	16	45.7
Agree	19	54.3
Total	**35**	**100.0**

6.2.16 RELEVANT EXPERIENCE BEFORE STARTING OWN BUSINESS

Twenty percent of participants entered the industry with experience of less than six months. About 29% had experience of more than six months but less than three years. Nearly 52% of participants entered with more than three years of relevant experience, as shown in Table 6.16.

TABLE 6.16 RELEVANT EXPERIENCE BEFORE STARTING OWN BUSINESS

	Frequency	Percent
Less than 6 months	7	20.0
More than 6 months but less than 1year	1	2.9
More than 1 year but less than 2 years	3	8.6
Less than 3 years but more than 2 years	6	17.1
More than 3 years	18	51.4
Total	**35**	**100.0**

6.2.17 ADVICE PROVIDED

Twenty-six (74%) of the 35 participants use the advice provided to them by their business advisors (see Table 6.17).

TABLE 6.17 ADVICE PROVIDED BY BUSINESS ADVISOR

	Frequency	Percent
Disagree	8	25.8
Agree	26	74.3
Total	**35**	**100.0**

6.2.18 TRAINING COURSES

Eighteen out of 35 participants have not attended relevant training courses to enhance their understanding of their businesses. Seventeen participants have attended the courses as shown in Table 6.18.

TABLE 6.18 RELEVANT TRAINING COURSES TO UNDERSTAND MY BUSINESS

	Frequency	Percent
Disagree	18	51.4
Agree	17	48.6
Total	**35**	**100.0**

6.2.19 I BELIEVE GOVERNMENT CAN DO MORE TO ASSIST SMALL-SCALE MINING COMPANIES

The majority of participants believe that government can do more to assist small-scale mining companies (see Table 6.19).

TABLE 6.19 GOVERNMENT ASSISTANCE

	Frequency	Percent
Disagree	5	14.3
Agree	30	85.7
Total	**35**	**100.0**

- Approximately 86% of business people in the small-scale mining industry believe that the government can do more to assist small-scale mining companies.

6.2.20 MY FAMILY SUPPORT ME IN MY BUSINESS

Their families provide support (65.7%). Twelve participants do not get the support of their families as shown in Table 6.20.

TABLE 6.20 FAMILY SUPPORT

	Frequency	Percent
Disagree	12	34.3
Agree	23	65.7
Total	**35**	**100.0**

- About 66% of small scale miners have the support of their families in their businesses.

6.2.21 PERSONALITY

Twenty-eight (80%) out of 35 participants consider themselves to be extroverts who have the ability to interact with various people from their communities. Seven participants do not consider themselves extroverts and one participant is not sure (see Table 6.21).

TABLE 6.21 EXTROVERT QUALITIES.

	Frequency	Percent
Disagree	6	17.2
Don't know	1	2.9
Agree	28	80
Total	**35**	**100.0**

6.2.22 DESIRE TO TAKE RESPONSIBILITY AND BE IN CONTROL

Thirty-four out of 35 participants desire to take responsibility and be in control. One participant prefers not to be in control.

TABLE 6.22 RESPONSIBILITIES AND CONTROL

	Frequency	Percent
Disagree	1	2.9
Agree	34	97.1
Total	**35**	**100.0**

6.2.23 RISK

Moderate risk is preferred by 23(66%) participants compared to 11 participants who do not prefer moderate risk and one participant who is not sure of his/her preference as illustrated in Table 6.23.

TABLE 6.23 PREFERENCES FOR MODERATE RISK

	Frequency	Percent
Disagree	11	31.4
Don't know	1	2.9
Agree	23	65.7
Total	**35**	**100.0**

6.2.24 I HAVE A STEADFAST CONFIDENCE IN MY ABILITY TO SUCCEED

Nearly 92% of participants have a steadfast confidence in their ability to succeed, about 3% of participants do not have confidence, and 5.7% of participants do not know (see Table 6.24).

TABLE 6.24 CONFIDENCE IN ABILITY TO SUCCEED

	Frequency	Percent
Disagree	1	2.9
Don't know	2	5.7
Agree	32	91.4
Total	**35**	**100.0**

6.2.25 I HAVE AN ORIENTATION TOWARDS THE FUTURE AND THINK CREATIVELY

Thirty-three (94%) participants have an orientation towards the future and think creatively. One participant does not have the orientation towards the future and creative thinking, another participant does not know his qualities as shown in Table 6.25.

TABLE 6.25 ORIENTATION TOWARDS THE FUTURE AND CREATIVITY

	Frequency	Percent
Disagree	1	2.9
Don't know	1	2.9
Agree	33	94.3
Total	**35**	**100.0**

6.2.26 I HAVE SKILL IN ORGANISING AND A LOVE OF ACHIEVEMENT

Thirty-one out of thirty five participants have the skill for organising and a love of achievement. Three participants do not have the skills and one participant is not sure as shown in Table 6.26.

TABLE 6.26 SKILL IN ORGANISING AND ACHIEVEMENT

	Frequency	Percent
Disagree	3	8.6
Don't know	1	2.9
Agree	31	88.6
Total	**35**	**100.0**

6.2.27 THE BUSINESS IS FLEXIBLE AND CAPABLE OF CREATIVE ADAPTATION TO A CHANGING ENVIRONMENT

Twenty-six out of 35 participants believe that the business is flexible and capable of creative adaptation to a changing environment. Five participants do not believe that the business is flexible and four participants are not sure as illustrated in Table 6.27.

TABLE 6.27 THE BUSINESS IS FLEXIBLE AND CAPABLE OF CREATIVE ADAPTATION TO A CHANGING ENVIRONMENT

	Frequency	Percent
Disagree	5	14.3
Don't know	4	11.4
Agree	26	74.3
Total	**35**	**100.0**

- About 74% of small scale-miners believe that the business is flexible and capable of creative adaptation to a changing environment.

6.2.28 I MANAGE THE BUSINESS AND WORK TOARDS GOALS AND PLANS

Twenty out of 35 participants manage their and work towards goals and plans. Fifteen participants do not manage nor plan their business activities (see Table 6.28).

TABLE 6.28 MANAGING THE BUSINESS AND WORKING TOWARDS GOALS AND PLANS

	Frequency	Percent
Agree	15	42.9
Strongly Agree	20	57.1
Total	**35**	**100.0**

- Management of business and working towards goals and plans are done by about 57% of the small-scale miners in Bophirima.

6.2.29 SELF-ASSESSMENT AND FEEDBACK ON PERFORMANCE

In their businesses twenty-four out of 35 participants have in their businesses, a built-in mechanism for self-assessment and feedback on performance. Businesses of six participants do not have a mechanism for self-assessment and feedback on performance. Five remaining

participants do not know what a "mechanism for self-assessment and feedback on performance" is as illustrated in Table 6.29.

TABLE 6.29 SELF-ASSESSMENT AND FEEDBACK ON PERFORMANCE

	Frequency	Percent
Disagree	6	17.2
Don't know	5	14.3
Agree	24	68.5
Total	**35**	**100.0**

6.2.30 DECISION MAKING ON ROUTINE AND OPERATIONAL MATTERS

Twenty-nine (83%) of participants delegate decision-making on routine and operational matters as shown in Table 6.30.

TABLE 6.30 ROUTINE AND OPERATIONAL DECISION MAKING.

	Frequency	Percent
Disagree	6	17.2
Agree	29	82.9
Total	**35**	**100**

6.2.31 FREEDOM OF DECISION MAKING

Nearly all the respondents prefer their own freedom of decision-making opposed to working as an employee. One participant is not sure with his preference is, as illustrated in Table 6.31.

TABLE 6.31 FREEDOM OF DECISION MAKING.

	Frequency	Percent
Don't know	1	2.9
Agree	34	97.2
Total	**35**	**100.0**

6.2.32 COLLABORATION AND TEAMWORK

About 97% of respondents believe in emphasising collaboration and teamwork and discouraging inappropriate competition as shown in Table 6.32.

TABLE 6.32 COLLABORATION AND TEAMWORK

	Frequency	Percent
Disagree	1	2.9
Agree	34	97.1
Total	**35**	**100.0**

6.2.33 ORGANISATION OBJECTIVES AND INDIVIDUAL GOALS

Twenty-nine (92.9%) of the 35 participants believe that there is integration of organisation objectives with individual goals and a high level of self-direction and self-control by employees as illustrated in Table 6.33.

TABLE 6.33 ORGANISATION OBJECTIVES AND INVIDUAL GOALS

	Frequency	Percent
Disagree	1	2.9
Don't know	5	14.3
Agree	29	92.9
Total	**35**	**100.0**

6.2.34 MOTIVATION TO START BUSINESS

To start their own businesses, more than 70% of participants were motivated by forces other than themselves. The highest other motivating force is parents, with nearly 43% as shown in Table 6.34.

TABLE 6.34 MOTIVATION TO START BUSINESS

	Frequency	Percent
Own	10	28.6
Parents	15	42.9
Government	3	8.6
Others	7	20.0
Total	**35**	**100.0**

- Only 28.6% of participants had their own self-motivation to start their businesses.

The responses of small-scale miners as documented above have been further analysed and interpreted. This was done by firstly grouping them in categories i.e. race, age and gender. Most responses of the participants were informed by their experiences in small-scale mining business.

6.3 BUSINESS OPERATION

The following questions were formulated with a view to assess the business operations of the small-scale mining companies.

6.3.1 NUMBER OF YEARS OF EXPERIENCE

Two out of the ten black respondents has more than three years experience, and out of every fourteen white miners, thirteen has more than three years relevant experience (see Table 6.35).

TABLE 6.35 YEARS OF EXPERIENCE

Question: I had the following period of relevant experience before starting to run my business	**Black**	**White**	**Coloured**	**Indian**
More than three years of relevant experience	2	13	3	1
Less than three years of relevant experience	8	1	5	2

6.3.2 I UTILISED MY OWN SOURCE OF FUNDING AS START-UP CAPITAL

To start their business, nine out of ten black participants were funded by Government. The government funded two white participants (out of fourteen) as shown in Table 6.36.

TABLE 6.36 OWN SOURCE OF FUNDING

Question: I utilised my own source of funding as a start –up capital	**Black**	**White**	**Coloured**	**Indian**
I funded my start-up capital: No, government did	9	2	2	0
I funded my start-up capital: Yes	1	12	6	3

More black small-scale miners rely on government funding compared to their White, Indian and Coloureds counterparts.

6.3.3 MY BUSINESS IS FINANICALLY SOUND AND I EXPECT IT TO CONTINUE FOR AT LEAST ANOTHER YEAR

Seven out of 10 black and one out of 6 coloured participants do not believe that their businesses are financially sound and they do not expect it to continue for another year. All fourteen White and three Indian participants are confident that their businesses are financially sound and they expect them to continue for another year. This is shown in Table 6.37.

TABLE 6.37 FINANCIAL SOUNDNESS OF BUSINESS

My business is financially sound and I expect it to continue for at least another year	Black	White	Coloured	Indian
My business is financially sound…	3	14	5	3
Business not financially sound…	7	0	1	0

More Black small-scale miners appear to lack confidence and are faced with a bleak future in their businesses compared to their White, Indian and Coloured counterparts.

6.3.4 RELEVANT TRAINING COURSES (RACE GROUPS AND GENDER).

To enhance their understanding of their business affairs, 7 out of 10 Black participants were trained by training companies. Their parents/family members trained 12 out of 14 White participants, and 3 out of 6 Coloured participants were trained. A training company trained 2 out of 3 Indian participants. Seventy percent of female participants have attended training courses that enhance their understanding of business, compared to forty percent of their male counterparts who attended courses. This is illustrated in Table 6.38.

TABLE 6.38 RELEVANT TRAINING COURSES

Question: I have attended relevant training courses to enhance my understanding of my business	Black	White	Coloured	Indian
Training Company trained me to run my business affairs	7		2	2
My parents/family trained me to run my business affairs		12	1	
I was not trained to run my own business affairs	3	2	3	1
Question: I have attended training courses to enhance my understanding of business			**Female**	**Male**
I have attended training courses to enhance my understanding of business			7 = 70%	10 = 40%
I have not attended training course to enhance my business understanding			3 = 30%	15 = 60%

About 60% of male small-scale miners have not attended courses that enhance their understanding of business. An overwhelming number of White small-scale miners are trained by their parents or other family members and not by a training institution.

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6.3.5 RELEVANT EXPERIENCE

13 out of 16 participants below 30 years of age have less than 3 years experience. 13 out of 16 respondents aged above 30 years of age have more than three years experience as illustrated in Table 6.39.

TABLE 6.39 RELEVANT EXPERIENCES BEFORE STARTING OWN BUSINESS

Question: I had the following period of relevant experience before starting to run my own business	Below 30 years	Between 31 - 40	Between 41 – 50	Above 50
I had more than three years of business experience…	3	4	3	6
I had less than three years of business experience…	13	1	2	0

Small-scale miners below thirty years of age are new entrants with less than 3 years experience in the industry.

6.3.6 CONDUCTING BUSINESS AS A SMALL SCALE COMPANY

12 out of 16 participants below the age of 30 had been in business for less than three years. 12 out of 16 participants above 30 years of age have been in business for more than 3 years as seen in Table 6.40.

TABLE 6.40 CONDUCTING BUSINESS AS A SMALL SCALE COMPANY

Question: I have been conducting business as a small scale company	Below 30 years	Between 31 & 40	Between 41 & 50	Above 50
I conducted my business for more than 3 years	4	2	4	6
I conducted my business for less than 3 years	12	3	1	0

It is evident from table 6.39 that small-scale miners, younger than thirty years,g hyol have not been in business for longer than three years.

6.3.7 SUPPORT AND ASSISTANCE FROM GOVERNMENT/DONORS TO CONDUCT BUSINESS (Age Groups and Gender).

8 out of 17 respondents below the age of 30 believe that the support from government is enough. 9 out of 17 participants over the age of 30 think that the government does not do much as depicted in Table 6.41. Female participants constitute nearly 29% of the total

respondents. 5 out of 10 female participants believe that they get enough support from Government. 14 out of 25 male participants believe that they do not receive enough support from the government as seen in Table 6.41.

TABLE 6.41 SUPPORT AND ASSISTANCE FROM GOVERNMENT/DONORS

Details	Below 30 years	Between 31 & 40	Between 41 & 50	Above 50
There is enough support from government> 45.7%	8	1	2	5
The support from government is not enough> 54.3%	9	6	3	1
Question: I get enough support from government/donors to conduct my business			**Female**	**Male**
Number of participants > 35			10 =28.6%	25 =71.4%
I get enough support and assistance from government			5 = 50%	11 = 44%
I do not get enough support and assistance from government			5 = 50%	14 = 56%

50% of female small-scale miners believe that they do not get enough support from Government compared to a 65% of male small-scale miners who are of the same opinion.

6.3.8 FINANCIAL SOUNDNESS

4 out of 17 respondents under the age of 30 believe that their businesses are not financially sound. 5 participants are not sure as shown in Table 6.42.

TABLE 6.42 FINANCIAL SOUNDNESS OF BUSINESS

Details	Below 30 years	Between 31 & 40	Between 41 & 50	Above 50
Business is financially sound to continue next year	8	5	5	6
Not financially sound to continue for another year	4	0	0	0
Not sure whether financially sound or not	5	1	0	0

Most small-scale miners under the of age 30 are either not sure whether their businesses are financially sound or they believe that their businesses are not financially sound

6.3.9 INTERNAL CONTROL

3 out of 10 female respondents do not show confidence in the internal controls of their businesses. 4 out of 25 male participants do not believe that their businesses have a sound internal control to safeguard their assets as shown in Table 6.43.

TABLE 6.43 INTERNAL CONTROLS

Question: I have a sound system of internal control to safeguard my business	**Female**	**Male**
I have a sound system of internal control to safeguard my business	7= 70%	21 = 85.2%
I do not have a sound system of internal control to safeguard my business	2 = 20%	1 = 3.7%
I am not sure whether I have a sound system of internal control	1 = 10%	3 = 11.1%

More than 70% of respondents show confidence in the internal controls of their businesses.

6.3.10 PREVIOUS EXPERIENCE

60% of female participants had less than 3 years of relevant experience before starting their businesses compared to their male counterparts with 44% of the same opinion as seen in Table 6.44.

TABLE 6.44 PREVIOUS EXPERIENCES

Question: I had more than three years experience before running my business	**Female**	**Male**
I had more than three years of experience before running my business	4 = 40%	14 = 56%
I had less than three years of experience before running my business	6 = 60%	11 = 44%

About 56% of male small-scale miners have been in the industry for more than three years, compared to 40% of female small-scale miners with more than three years in the industry.

6.3.11 GOVERNMENT ASSISTANCE

All female participants believe that Government can do more to assist small-scale companies. As shown in Table 6.45, five (20%) of the 25 male participants do not believe that the government can do more than it is doing now.

TABLE 6.45 GOVERNMENT ASSISTANCE

Question: I believe government can do more to assist small scale companies	**Female**	**Male**
I believe government can do more to assist small scale companies	10 = 100%	20 = 80%
I do not believe government can do more to assist small scale companies	0 = 0%	5 = 20%

About 90% of small-scale miners, of both genders, believe that the Government can do more to assist small-scale companies.

6.4 CONCLUSION

The responses received from participants were carefully analysed and presented through tables and interpreted.

In this section the outcomes and observations were discussed and in the next chapter conclusions will be drawn and recommendations will be suggested.

CHAPTER 7

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

7.1. Introduction

The discussion, conclusion, implications and recommendations of this research are based on the findings from the questionnaire returned by the respondents. Interviews and physical visits by the researcher about the status of the small-scale miners in Bophirima region of the North West Province were made. Attention was also given to designing appropriate questionnaires that would prompt the relevant answers to the research questions. The focus of this chapter will be on providing conclusions and recommendations for consideration by the small-scale mining companies and other stake-holders in the small-scale mining industry.

7.2 MAIN FINDINGS

(a) Findings – Race

Only 2 out of every 10 black miners have more than three years experience, and 13 have more than 3 years relevant experience (Table 6.35). This finding suggests that in the past 3 years, the small scale mining sector has not been easily accessible to Black entrepreneurs and it further suggests that this group is inexperienced and not better positioned to ensure a sustainable future when compared with their counterparts, unless they receive special monitoring or guidance.

The data (***Table 6.36)*** show that a large number of Black small-scale miners rely more on Government funding than their White counterparts. Only 2 out of 14 Whites rely on Government funding compared to 9 out of 10 Black miners who rely heavily on Government funding.

More Blacks appear to lack confidence and are faced with a bleak future in their business compared to Whites, Indians and Coloureds. It appears in Table 6.37 that 3 out of 10 Black miners do not think that their businesses are financially sound compared to their counterparts of other races (Table 6.37).

Although more Blacks acknowledge support from the government than any other racial group, it is clear that, in most cases, the support rendered by the government to the business community is insufficient as is evident from table 6.41 (54.3% believes that they do not receive enough support).

Another finding in Table 6.38 indicates that 71.4% of the miners are trained to conduct the mining business in which they are currently involved. However this does not necessarily mean that these people are fully equipped with the necessary skills to manage and conduct their businesses properly. It is suggested that because most of the "trainers" of these miners are not professionals they might as well have transferred their weaknesses rather than skills to their "trainees". Table 6.38 indicates that their parents or other family members, and not a training institution, train most of these miners, especially Whites. More attention in areas of operational management, monitoring of business performance and the knowledge of mining industry should be directed to the new entrants in the industry It is therefore recommended that programmes, that will not only ensure sustainability but also growth of this new businesses in the industry, be developed. These programmes should comprise of performance monitoring mechanisms, management courses for owners, internal controls and courses on the mining industry itself. This programme will assist in easing the burden of financial reliance on Government. In an attempt to increase the confidence that is lacking for small-scale miners, particularly Blacks, (perhaps because of their "new comer" status), the Government and other stakeholders in the industry, should provide enough support to fund initiatives for research. The process of transferring skills to small-scale miners by way of training should be conducted by accredited trainers/mentors. This should be done so that the Government, and other stakeholders, know exactly what these miners' capabilities are.

(b) Findings - Age

Approximately 52% of owners of small-scale mines are older people. 13 out of the 16 small-scale miners below 30 years have less than 3 years of relevant experience, while small-scale miners above the age of 30 have more than 3 years relevant experience.

This signals that most mining businesses, that are run by young owners, under 30 years of age may not be sustainable due to a lack of experience by the owner (table 6.40).
About 54% of participants feel that the support received from government is not enough. This pertains more to business people less than 30 years than to other age groups (table 6.41). 11% of respondents feel that their businesses are not financially sound and it cannot continue for another year (mainly young people).
In order to ensure sustainability, it is recommended that more young people, of all races, should be introduced as business owners to the industry. These young people should not only be introduced to the industry, but they should be well trained to run their businesses and also how to grow in the industry.

(c) Findings - Gender

Although 28.6% of female participants believe that the government need to do more to assist small-scale mining companies, it is evident that more females have been to a training course of business enhancement compared to their male counterparts. It is reflected in table 6.38 that 17 out of every 10 females and 4 out of every 10 males have attended a relevant training course that assisted in enhancing their business understanding. This indicates that, although there are few women in the industry, they have been taken care of as far as training is concerned.

More than 50% of male respondents believe that they do not get enough support and assistance from Government and 50% of female respondents had the same opinion regarding Government assistance (Table 6.41). Only 5 out of every 25 female participants have 3 years relevant experience, compared to 14 out of 25 male respondents with more than 3 years relevant experience, substantiated by Table 6.44. These findings indicate that this small-scale mining industry is in a transformation stage of having the youth and women on board. And there are threats that this transformation may disturb the stability of mining business due to lack of experience from new comers.

It is recommended that Government should give more support to females in the mining business. This support should include funding, mentoring, technical support and educational advancement of the owners. In addition, the Government and other stake-holders should prevent the threat of instability of the mining industries by closely monitoring this segment.

(d) Do the small-scale miners have confidence?

A large number of small-scale miners are more confident that they will succeed and that they have the "know-how" to run their businesses because they believe they have a specific plan and strategy for conducting business as shown in Table 6.10.

It is suggested that the Department of Minerals and Energy introduce a system of monitoring these business people and assist the small-scale miners to identify their business failures pro-actively.

(e) Introduction of young people to the industry

The small-scale miners who have been in operation for more than two years are mostly young miners. Although there is a limited threat as to the sustainability of small-scale mining, to ensure continuous sustainability, more young people should join the industry.

They should be well trained to ensure a good return on investment and long-term continuity for individual youth mining businesses.

(f) Do small-scale miners advance themselves by means of study?

Only 31.5% of business owners in the small-scale mining have qualifications beyond matric (Table 6.8). Owners should be encouraged to further their studies relating to the industry. Those females and young people who already had exposure to the small-scale mining industry should be well trained in order to eradicate failure-to-sustain.

More bursaries and tax benefits should be made available by the Government in order to encourage the small-scale miners to further their studies. The Department of Minerals and Energy should also run educational programmes directed at the small-scale miners.

(g) How confident are small-scale miners in record keeping and controls of transactions of the business?

Nearly 90% of small-scale miners are confident that they have a sound system of internal control to safeguard their business (table 6.12) and 74.3% of small-scale miners are confident that they have a sound system of financial record keeping (Table 6.13).

It is recommended that an accredited financial trainer assist in the process of proper record keeping and improve internal control system.

(h) Can government do more to assist small-scale mining companies?

Approximately 86% of the small mining business community believe that the Government can do more to assist the small-scale miners (table 6.19). Most of the assistance required by the small miners from the government includes training, financing, guidance and monitoring.

It is recommended that the Government should introduce programmes that will assist small-scale miners. These programmes should be monitored by the Department of Minerals and Energy.

7.3 RESPONSES TO QUESTIONS ON ENTREPRENEURIAL CHARACTERISTICS.

A set of questions was formulated to assess the entrepreneurial abilities of the managers of the small-scale mining companies.

7.3.1 A PREFERENCE FOR MODERATE RISK

Moderate risk is preferred by 23(66%) of participants as indicated in Table 6.23.
A greater percentage of the participants take calculated risks when executing their plans for the business. The 11(34%) participants are not cautious as they indulge in uncalculated risks in their business dealings, which can result in business failure. These managers need to be educated in the area of risk management.

7.3.2 CONFIDENCE IN ABILITY TO SUCCEED

Nearly 92% of participants have a steadfast confidence in their ability to succeed, about 3% of participants do not have confidence and 5% of participants do not know as illustrated in Table 6.24. It is clear that most of the respondents have confidence in the ability to succeed. This is an entrepreneurial quality, which can contribute to the success of small-scale mining companies.

7.3.3 AN ORIENTATION TOWARDS THE FUTURE AND CREATIVITY

Ninety four percent (94%) of participants are future orientated and think creatively. One participant is not future orientated and does not have creative thinking, as illustration in Table 6.25. More participants have bright and creative future plans for the sustainability of their small-scale mining businesses. The managers are very creative and respond to innovative technologies so that they can enhance their competitive advantage in the market

7.3.4 A skill in organising and achievement.

31 out of 35 participants have skills in organising and a love of achievement as illustrated in table 6.26. Most participants are organised as they plan thoroughly to execute their work. The managers lead the way in the activities of the business and ultimately they control and evaluate the output.

7.3.5 The business is flexible and capable of creative adaptation to a changing environment.

26 out of 35 participants believe that the business is flexible and capable of creative adaptation to a changing environment. About 74% of small-scale miners believe that the business is able to adapt to changes in the market and any other competitive forces (Table 6.27). This is a good entrepreneurial quality and it will ensure the sustainability of the small-scale mining companies.

7.3.6 Management of the business and working towards goals and plans.

30 the 35 participants manage their business and work towards goals and plans. 15 participants do not manage nor plan their business activities as illustrated in Table 6.28. This implies that 57% of small-scale miners in Bophirima manage their business and work towards goals and plans. The manager's of small-scale miners set goals for themselves and make sure that they live and fulfil their set goals. This quality will ensure the growth of the business and sustainability as goals are met on time as planned.

7.3.7 Self-assessment and feedback on performance.

In their business, 24 out of 35 participants have a built-in mechanism for self-assessment and feed-back on performance. Businesses of six participants do not have a mechanism for self-assessment and feed back on performance. The remaining participants do not know, as illustrated in Table 6.29. Self-assessment and feed-back on performance is an entrepreneurial quality as it indicates levels of achievement. The majority of the respondents have the ability to evaluate their performance and determine their operational effectiveness. The feed-back on performance will guide the managers to formulate their strategies to ensure sustainability of the small-scale mining companies.

7.3.8 ROUTINE AND OPERATIONAL DECISION MAKING

29 (83%) of participants delegate decision making on routine and operational matters far down in the company as illustrated in Table 6.30. The managers of the small-scale mining companies value the contribution of all employees. They do not limit operational decision making to top-management as they also include the lower level employees. This instils a sense of responsibility, trust and ownership to the lower level employees. This ensures good relations between employer and employee and can result in the sustainability of the business.

7.3.9 FREEDOM OF DECISION MAKING

Nearly all the respondents (97%) prefer their own freedom of decision making as opposed to working as an employee (Table 6.31). Most of the respondents have an entrepreneurial characteristic, as they prefer freedom of decision-making as opposed to waiting for somebody else or a supervisor to lead them in executing their decision-making.

7.3.10 Collaboration and teamwork.

About 97% of respondents believe in emphasising collaboration and teamwork and discouraging inappropriate competition as illustrated in Table 6.32. The respondents encourage a spirit of working together towards one goal as a team. All the employees are

working together as a team. This synergy is very important and will ensure a sustainable business.

7.4 LIMITATION OF RESEARCH

The sample was relatively small and it can be limiting to generalise the findings across the industry.

7.5 FUTURE RESEARCH

Research which can compare the sustainability of Government funded small-scale mining companies to self or privately financed small-scale mining companies might contribute in this area of study. The research should be structured in such a way that all stake-holders in the small-scale mining industry are involved.

7.6 CONCLUSION

The main objective of the study was to determine the factors affecting the sustainability of small-scale mining companies in the Bophirima region. As outlined in the first chapters of this study, there are challenges for the sustainability of small-scale mining operations. The challenges include unavailability of finance, markets and trained personnel. The role of entrepreneurial characteristics in the sustainability of companies in the mining sector has been determined. The findings of the study have achieved what was set out as the objectives of the study.

The success or failure does not only concern money, but it is mainly dependent on the personality and characteristics of those individuals which include education, work experience, age, commitment and motivation. The owners of small-scale mining companies are a major factor for the success or failure of the business. Training and skills development will enhance the ability of individuals and their entrepreneurial qualities. The support from Government and private organisations should not only be to fund the projects but rather to prepare the person in all aspects of skills development, commitment and motivation which can lead to the success of businesses.

Although small scale miners believe that they have the potential, and quality to be sustainable in the industry, their business do not support this claim. This industry is run by many new owners, and Government with its programmes, intends to introduce even more female and young entrepreneurs to the industry. However, not much is done to ensure that these new and "old" miners know exactly what they ought to do, Much more can be done

regarding the running of the business, the control thereof and the understanding of the industry.

The implementation of the suggested recommendations can bring a positive outcome with regard to the sustainability of small-scale mining companies.

Annexure 1

QUESTIONNAIRE

RESEARCH MBA

My name is Mogapi Rakumakoe and I am a student in the North West University (Mafikeng Campus) conducting research for my Masters Degree. I will appreciate your help to complete this questionnaire. It will not take more than ten minutes. The research is about **an analysis of the factors affecting the sustainability of Small-Scale Mining Companies in the Bophirima Region of the North West Province.**

Thank you very much

Mogapi Rakumakoe

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04 June 2006

The Manager
Small Scale Mining Companies

Dear Sir / Madam

Permission to conduct research – Mr.J.M.C.Rakumakoe, student no: 10726411

This letter serves to introduce Mr.J.M.C.Rakumakoe, who is presently a registered student in the Masters in Business Administration programme at the Graduate School of North West University. He is conducting a research project on, **"Factors affecting the sustainability of Small Scale Mining Companies in the Bophirima region of the North West Province"**, as partial fulfillment of his Masters in Business Administration (MBA).

Your Department is requested to afford him full co-operation to conduct his research in order to complete his study. In particular, Ms.Rakumakoe requires permission to access information, data or even to distribute questionnaires to the mining.

Please forward your response directly to Ms.Rakumakoe, in order to aid him logistical planning.

Please find the attachment.

Your cooperation will be highly appreciated.

pp Dolai

Dan Setsetse
Programme Director

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PART A

QUESTIONNAIRE

Please complete this section first and then follow instructions in the next sections.

My sex

Male	1
Female	2

My age

Below 20 years	1
20-30 years	2
31-40 years	3
41-50 years	4
Above 50	5

My race

Black	1
White	2
Coloured	3
Indian	4

PART B

QUESTIONNAIRE

Directions

Based on your experiences as a Small Scale Miner, please think about the kind of factors that would affect the sustainability of the mining operations. Think about the kind of factors or business principles with which you would be pleased to do business. If you feel a feature is not at all essential for excellent running of the Small-Scale Mining operations, cross strongly disagree. If you feel a feature is absolutely essential for excellent running of the Small-Scale Mining operation, cross strongly agree. If your feelings are less strong, cross one of the words in the middle. There are no right or wrong answers, All we are interested in, is the number that truly reflects your feelings regarding companies that would deliver excellent Small-Scale Mining and sustain its operations.

Please answer the following questions to the best of your ability:

I consider myself to be an entrepreneur

Strongly disagree	**Disagree**	**Don't know**	**Agree**	**Strongly agree**

2 I have been conducting my business as a small-scale mining company:

Less than 6 months	**More than 6 months but less than 1 year**	**More than 1year but less than 2years**	**Less than 3years but more than 2years**	**More than 3 years**

3 My business is financially sound and I expect it to continue for at least another year.

Strongly disagree	**Disagree**	**Don't know**	**Agree**	**Strongly agree**

4 I utilised my own source of funding as start-up capital for my business.

YES	
NO	

5 If 'No' in question above, what external sources did you use?

.....

.....

.....

6 My level of qualification is:

Partially finished Scholastic education	**High School**	**Certificate**	**Diploma**	**Degree/ Post Graduate**

7 I was trained to conduct the business in which I am currently involved.

Strongly disagree	**Disagree**	**Don't know**	**Agree**	**Strongly agree**

If positive name the type of training?

.....

.....

.....

8 I have a specific plan and strategy for conducting the business I am currently involved.

Strongly disagree	**Disagree**	**Don't know**	**Agree**	**Strongly agree**

If positive, when is it drawn up?

.....

.....

.....

9 I get enough support and assistance from government/donors to conduct my business.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, name the kind of support?

.....

.....

.....

10 I have a sound system of internal controls to safeguard my business.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, which do you regard as the most important?

.....

.....

.....

11 I have a sound system of financial record keeping.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

12 I have knowledge of and expertise in keeping my own records.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

13 Members of my family are successful entrepreneurs.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, in what way?

.....

.....

.....

14 List the five most important factors which contribute/contributed to the success or failure?

.....

.....

.....

.....

.....

15 I had the following period of relevant experience before starting to run my own business.

Less than 6 months	More than 6 months but less than 1 year	More than 1year but less than 2years	Less than 3years but more than 2years	More than 3 years

16 I utilise advice provided to me by my business advisor.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, what kind of advice?

.....

.....

.....

17 I have attended relevant training courses to enhance my understanding of my business.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, which?

.....

.....

.....

18 I believe government can do more to assist small scale mining companies

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive how?

.....

.....

.....

19 My family support me in my business.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

If positive, in what way?

.....

.....

.....

20 I consider myself to be an extrovert who has the ability to interact with various people from my community.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

21. I desire to take responsibility and be in control

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

22. I have a preference for moderate risk (carefully consider the risk that I take)

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

23. I have a steadfast confidence in my ability to succeed

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

24. I have a high level of energy and think innovatively

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

25. I am future orientated and think creatively

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

26. I have skill in organising and a love of achievement

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

27. The business is flexible and capable of creative adaptation to a changing environment

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

28. I manage the business and work towards goals and plans

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

29 The business has built in mechanisms for self–assessment and feed-back on performance

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

30 Decision-making on routine and operational matters is delegated far down in the company

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

31 I prefer my own freedom of decision making opposed to working as an employee.

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

32. Collaboration and teamwork are emphasised and inappropriate competition is discouraged

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

33. There is integration of organisation objectives with individual goals and a high level of self-direction and self-control by employees

Strongly disagree	Disagree	Don't know	Agree	Strongly agree

34 I was motivated by one of the following persons in starting my own business:

Own	Parents	Government	Donors	Others

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