UNIVERSITY OF KWAZULU-NATAL

**Investment strategies and related risk aversity of the
Master of Business Administration ("MBA") students at the
University of KwaZulu-Natal ("UKZN")**

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# DECLARATION

With the signature below, I hereby declare that this dissertation is based on my own research except where specifically acknowledged, and that I have not submitted this dissertation to any other institution of higher education to obtain an academic qualification.

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# INVESTMENT STRATEGIES AND RELATED RISK AVERSITY OF THE MASTER OF BUSINESS ADMINISTRATION ("MBA") STUDENTS AT THE UNIVERSITY OF KWAZULU-NATAL ("UKZN")

# ABSTRACT

It is an assumption that the investment decisions of the Master of Business Administration ("MBA") students are similar as the students have similar qualification and work experience. This study explores the extent of risk aversity in the investment strategies of students who are undertaking a dissertation for the requirement of a MBA degree at the University of KwaZulu-Natal ("UKZN"). In addition the empirical research identifies the factors that impinge upon their risk aversity to evaluate any differences or similarities between the male and female students in their attitude towards risk aversity. The research in essence probes these concerns by examining the objectives, expectations, preferences and constraints of the respondents using a quantitative survey method.

The findings of the empirical research indicate that the respondents are indeed risk averse in their investment strategies. Some respondents have an attitude of being risk tolerant in certain circumstances and in questions of opposing scenarios their attitude was one of risk aversity. The results show that male and female respondents are similar in their investment strategies although the degree of risk aversity was found to be slightly higher amongst the females compared to the male respondents.

The choice of stable investment vehicles, the expectation of earning consistent returns, the need to secure funds for future liability or to compensate for potential future risk, the constraints of income and job security and the need for long-term security were some of the factors influencing the extent of their risk aversity. The research findings point to the desirability of further research into the defined sample unit across other accredited MBA institutions in South Africa.

# TABLE OF CONTENTS

# LIST OF FIGURES

# LIST OF TABLES

# GLOSSARY OF TERMS

*AMPS* refer to the All Media and Products Survey.

*Blue Chip* refers to the nickname for a share that is thought to be safe, in excellent financial shape and firmly entrenched as a leader in its field. Blue chips generally pay dividends and are favourably regarded by investors. A few examples of blue chips are MTN, Coca-Cola, Anglo Gold and Naspers.

*Bond* refers to a financial instrument that promises that the borrower (issuer) will pay the interest holder and repay the capital amount over a certain period of time. Bonds represent debt to the issuer.

*Broker* refers to an intermediary (an individual or entity) who acts purely as an agent in facilitating financial transactions, in return for a commission or a brokerage fee.

*Business risk* refers to the extent of uncertainty about a firm's cash flows as a result of the nature of its business.

*Callability risks* refer to the variability of return because of bonds or preference shares that may be requested by the issuing firm.

*Debt instruments* refer to securities representing part or all of the debt of borrowers. Examples of debt instruments are government bonds and treasury bills.

*Derivatives* refer to financial instruments that relate to other instruments from which they derive much of their value.

*E-mail* refers to mail delivered or received electronically.

*Equity* refers to an instrument that represents part ownership of a corporate entity, for example, an ordinary or preference share.

*Exchange rate* refers to the price of one currency in terms of another.

*Exchange rate risk or currency risk* refers to the probability of receiving a reduced amount in local currency when investing in an instrument that makes payments in another currency.

*Financial Phobia* refers to the feeling of dread associated with handling personal investments and financial matters.

*Financial risk* refers to the measure of volatility of the stakeholders' (shareholders or bondholders) claims on a firm's assets.

*Futures* refer to contracts that are traded on the formal exchange, for the future delivery of specific instruments, in terms of quantity and predetermined price.

*GSB* refers to the Graduate School of Business of the University of KwaZulu-Natal.

*JSE* refers to the Johannesburg Securities (Stock) Exchange which is an equity market for the issue and trading of South African equities issued by the corporate sector.

*Liquidity* refers to the extent to which an instrument can be easily and inexpensively acquired or disposed.

*Liquidity risk* refers to the risk arising from a lack of marketability of an investment that cannot be sold quickly enough to avert or minimise a loss.

*Mortgage Bond* refers to a claim against specific assets owned by the issuing party and pledged to the debt.

*MBA* refers to Master of Business Administration.

*NRF* refers to the National Research Foundation.

*Options* refer to a contract that gives the holder the right, but not an obligation, to buy and sell an instrument at a given price in a specified period of time period.

*Ordinary Shares* refer to the shares that give their holders voting power in a company and the right to share in profits after the payment of preference share dividends and interest on bonds.

*Preference Shares* refer to shares that rank higher than ordinary shares, which mean that the dividends on preference shares have to be paid before dividends on ordinary shares are paid.

*Population or Sample Frame* refers to a collection, or set, of all individuals, objects, or measurements whose properties are being studied.

*Risk Tolerance* refers to the degree of uncertainty that an investor can handle in regard to a negative change in the value of their portfolio.

*SA* refers to South Africa.

*Sample or Sample Unit* refers to a portion, or part, of the population being studied.

*Security* refers to the legal representation (in the form of paper certificates or electronic records) to receive prospective future benefit, under stated conditions.

*Speculation or speculating* refers to the taking of risk for the sole purpose of making a profit.

*SPSS* refers to a software programme called Statistical Package for the Social Sciences.

*Swaps* refer to agreements to exchange underlying cash flows on notional instruments.

*UKZN* refers to the University of KwaZulu-Natal.

*Unit trusts* refer to fixed diversified portfolios consisting of various securities that are deposited with a trustee and offered to the public in units.

*USA* refers to the United States of America.

*Volatility* refers to the standard deviation of a percentage change in the price of an instrument.

*Wealth* refers to the total resources, inclusive of all assets, owned by the individual.

*Chapter 1*

# 1. Introduction

## 1.1. Background

Whilst many international studies relating to investment behaviour have been undertaken, none of the studies have focused on the investment strategies of the Master of Business Administration ("MBA") students of the University of KwaZulu-Natal ("UKZN"). This study will focus on the dynamics influencing risk aversity in the investment strategies of the MBA dissertation students of the UKZN. The report will specifically focus on the individual or private investor who is a MBA dissertation student.

By identifying the factors that indicate that the students are averse and confirming if they are risk averse, this study will bridge the current academic gap in the field of South African investment markets. The results of the empirical research will assist intermediaries in understanding the wants and needs of the fast emerging market of clients with MBA credentials. Such knowledge will hopefully result in improved product and service offerings to this specialised target market.

Given that all MBA students have similar qualification and the opportunity to achieve the same level of financial success, the degree of risk aversity should be similar for both male and female MBA students (Simpson, 1995). This study will also therefore identify whether there are any differences or similarities regarding risk aversity between the male and female UKZN MBA dissertation students in their investment decisions. The research will be undertaken by examining their objectives, expectations, preferences and constraints in terms of the extent of risk aversity in their investment strategies.

For the purposes of the research to be undertaken, the use of the term "investment strategy" will not refer to textbook strategy or textbook financial theories relating to accounting principles. It will refer to the different types of investments in, for example, stocks, retirement funds and property and how the investor chooses such investments based on anticipated profit or loss of savings by investing.

The use of the term "preference" for the purpose of the study will not refer to the in-depth behavioural science study of preference and rather it is intended that the study will look at what motivates preference in terms of the investor's circumstances and the factors that make an investor choose a particular investment strategy over others. For example, these preferences may be influenced by household composition or population group.

## 1.2. Problem Statement and Importance of Study

The growing popularity of the MBA degree and the career opportunities and financial prospects enjoyed by MBA graduates is a current topic in South Africa ("SA") and internationally (Pak and Tunca, 2004). Most MBA graduates will hold senior positions in the business world (Hinds, 2005). Therefore studies on the risk aversity of MBA students are relevant in that the degree of risk taken in their decision-making will have a ripple effect on industry and the economy (Furlonger, 2003a). They may therefore be involved in investment decisions worth vast amounts of money on behalf of others and for themselves.

As is the case in other disciplines, female business graduates now generally command salaries similar to that of their male colleagues, occupy traditionally male dominated jobs and may have increased decision-making powers both at home and at work (Webster, 2007). In comparison to their male co-workers, there is increased business interest as to how these women view risk and the factors that influence their investment decisions (von Broembsen, 2005).

As all MBA students have a similar level of education and a requisite amount of managerial experience, the degree of risk aversion should be similar for both male and female MBA graduates (Simpson, 1995). However, there is relatively minimal academic evidence regarding the factors that influence female risk aversion and the extent of risk aversity in their investment strategies. Furthermore there is no evidence of related comparative studies between the South African male and female MBA students. All of the above reasons offer validation for the desirability of this research project.

It is necessary to assess the capacity for and the attitude toward risk of individuals as it is the key to successfully drafting and implementing an investment policy (Filbeck, Hatfield and Horvath, 2005). In SA there is very little related public information to assist portfolio managers, assurance companies, government as an employer and policy

makers to draft future policy or amend current policy, for example, pension fund schemes taking into account degrees of risk aversity acceptable to male and female workers. Furlonger (2003b) explains that there is general a lack of academic research in South Africa and this dilemma of lack of research-based information is also relevant to insurance brokers, stock brokers, property developers and people in similar intermediary jobs, who need to be more aware of the factors that affect the risk tolerance of MBA male and female graduates, in their goals to improve their specialist gender and general client services and products.

However, the above-mentioned MBA graduate target market must first be analysed in terms of their investing strategies in order for such businesses to conceptualise suitable solutions in the form of the product offerings. It is furthermore necessary for the businesses to urgently obtain information on this potential market in order to benchmark excellent service in South Africa and secure clients before their competitors win the race (Blumenthal and Ryan, 2005).

Based on the above reasons, it is important to see if there are any factors that indicate risk aversion in the investments of the MBA students, to confirm whether they are risk averse, and if there are any gender disparities with regard to risk aversion in their investment decisions. However, whilst Filbeck *et al.* (2005) refers to many studies on investment behaviour that have been undertaken, there is no evidence of studies conducted with the sole purpose of understanding the risk aversion relating to investment of the MBA students, more specifically MBA students in their final year of study at the UKZN.

Therefore, the problem faced by the researcher is that there is very little academic research and public policy on the investment strategies and related risk aversity of MBA students, more particularly students at the UKZN. This study is an attempt to address the above problem by conducting empirical research on MBA dissertation students that will contribute relevant information on the emerging investment market of MBA graduates.

## 1.3. Research Objectives

The overall intention of the proposed study is to investigate the above problem statement. The objectives of the research are therefore (1) to identify the factors that indicate that the UKZN MBA dissertation students are risk averse (2) to prove that they

are risk averse (3) to explore the differences and similarities relating to the risk aversion of the male and female students in their investment strategies.

In order to probe these objectives, the dissertation will examine the investment objectives, expectations, preferences and constraints of the students in relation to their demographic information. Such exploration will also assist in confirming the extent of risk aversion of these students and highlight any gender related differences. The demographic data to be collected will assist in the profiling of the respondents. It is not the intention of this research to look at every aspect of risk aversion, investment strategies or gender disparity in relation to the respondents.

## 1.4. Literature Review

Literature reviews will be explored to establish a theoretical framework to be used in chapter five of the dissertation in which the results of the empirical research are to be interpreted and, in subsection 3.2 of chapter 3, to determine the appropriate research methodology for the empirical analysis.

The empirical research will be canvassed through problems that have been identified (but not exhausted) in the problem statement and highlighted during the literature review. The information to be obtained during the review process will determine how any related disparities and research that have been addressed by other researchers will be eliminated.

As this study will explore the risk perceptions of the UKZN MBA dissertation students, the review will include relevant related UKZN information. The literature review process will entail research on elements of the problem statement and about the possible questions to be raised by this study. The proposed questions will relate to demographic and investment risk information (in terms of the types and strategies preferred, objectives of the investment decisions, understanding the expectations of the investors, attitudes toward risk and constraints in making investment decisions), of the proposed sample.

Apart from the traditional paper based data sources, electronic databases accessible via the UKZN website will be used to identify the relevant secondary data for the review of the literature. Research based on data gleaned from utilising internet search engines will also be used as a means to supplement the research.

is a term with several closely-related meanings in finance and economics, which is related to saving or deferred consumption.

Bodie *et al.* (2005) advise that the term personal investment refers to real assets (example a house) that are not consumed or goods to be used in future production. Gerber (1998) explains that in Economics, investment is a function of income and interest rates in that an increase in income will encourage higher investment. In addition the above writer states that a higher interest rate may discourage investment as it becomes costlier to borrow money (for example, investment in property funded by a mortgage bond).

The Oxford Dictionary for International Business (1998) defines financial investment as the purchase of assets, for example, money that is put into a bank as a saving or which may then be used to buy a real asset. The primary purchase of financial assets is to obtain a financial return in the form of income or capital gains (The Oxford Dictionary for International Business, 1998).

The objective of making an investment is the creation of wealth (Wagner, 2006). According to Wagner (2006), investment connotes the idea that security of the principle amount is important and speculation, on the other hand, is far riskier. In anticipation of a greater future return the investor generally holds onto the investment for a long duration (Wagner, 2006).

The main types of investors include insurance companies, fund managers, banks, companies (also called corporate investors) and private investors (Jordaan, Troost and Boonzaier, 1990). Plummer (2001) defines a private investor as an individual who holds shares solely for his or her own benefit and further states that a single private investor will normally hold only a very small percentage of the shares of a listed company.

Jordaan *et al.* (1990), cited above, find that sometimes individual investors make use of intermediaries either on a full time basis or regarding a specific aspect of their transaction because of legislative requirements and in the absence thereof, because of personal choice. Bodie *et al.* (2005) state that investments are often made indirectly through intermediaries, such as banks, mutual funds, pension funds, insurance companies, collective investment schemes, or even investment clubs.

Plummer (2001), cited above, advises that although the legal and procedural details differ, an intermediary generally makes an investment using money from many

individuals, each of whom receives a claim on the intermediary. He advises further intermediaries comprise of three groups, those who assist and advise on new security issues, those who assist in trading and those who assist with clearance settlement and custody.

According to Bodie *et al.* (2005), an investor may choose from a range of tangibles assets or the many types of securities and monetary assets available from capital and financial markets. Bodie *et al.* (2005) state that these include but are not limited to: immoveable property, trading on the Johannesburg Stock Exchange ("JSE") or foreign stock exchanges, long term insurance, retirement annuities, unit trusts, securities, government bonds, shares in private businesses, pension and provident funds.

Plummer (2001) divides the types of instruments that are issued or traded on capital markets into four classes, as illustrated below:

**Table 2-1**: Classes of instruments traded on capital markets

| Equity | Debt | Hybrids | Derivatives |
|---|---|---|---|
| Ordinary Shares | Bonds | Convertibles | Options |
| Preference Shares | Debentures | | Futures |
| | | | Swaps |

Source: Plummer (2001).

Plummer (2001) uses the above table to show that the classes of instruments traded on capital markets comprise equity, debt, hybrids and derivative instruments. Equity includes ordinary and preference shares, debt consists of bonds and debentures, derivatives comprise options, futures and swaps, and hybrids are convertibles (Plummer, 2001).

According to van Zyl, Botha and Skerritt (2005), derivatives cannot exist on their own because derivatives are derived from equity and debt instruments and are categorised according to the markets from which they are derived, for example, money, bond, equity, commodity and foreign exchange markets. However, van Zyl *et al.* (2005) claim that there are only two types of financial instruments, namely, equities and debt instruments). Plummer (2001) describes hybrids as instruments that combine the features of more than one instrument.

Plummer (2001) considers the most important characteristics of financial claims as reversibility and marketability, which refers to the ease with which the holders of the securities (or claims) can recover their investments. Fabozzi and Markowitz (2002)

report that primary debt includes lease contracts and hire-purchase contracts, and, indirect securities comprise fixed deposits, savings accounts, retirement annuities, member interest in pension funds, unit trusts and shares in participating mortgage bonds.

Although investment in unlisted or private companies may lead to huge profits, Falkena, Kok and Meijer (1989) warn that complete participation in the risk of the business can also lead to financial disaster and acrimony. Falkena *et al*. (1989) further caution that the level of risk related to liability will also depend on the type of unlisted entity, for example, investment in a close corporation limits the liability of the members and in a private company, shareholders are jointly and severally liable in their personal capacities.

Whilst unit trusts do not offer guarantees, Falkena *et al*. (1989) advise that this type of investment is entirely liquid, diversified among different shares and contributions may be easily amended or terminated. Regarding life assurance policy contracts, Falkena *et al*. (1989) highlight the irony that the person who effects the policy and who usually pays the premium, does not benefit from the policy at all. The above writers further illustrate that there are taxation benefits from investing in retirement annuities or pension schemes, although a large portion of pension benefits could be forfeited in the case of reduced employment periods and may not adequately provide for retirement.

Hodgkinson (2006) describes property investment opportunities as owning a building or farm, syndicate investments in large developments, and property trusts that are listed on the JSE. Lee (2005) claims that whilst the emotional pull of buying tangible property is an upside of the immoveable property market, the downside is that:

- property is more expensive and difficult to sell than other investments;
- it is less easy to liquidize than shares;
- it is more expensive to purchase;
- even if a mortgage bond is used to purchase property additional cash is required for the legal process of acquisition; and
- there are ongoing costs for maintenance, repair and taxation (rates).

This sub-section 2.2.1 reviews the opinions of various researchers relating to the meaning of the term investment and the different types of investments and investors. Investment is generally a saving for the creation of wealth or to be used for deferred consumption. There are various types of investments ranging from the purchase of immoveable property to trading on the stock exchange. The type of investment is dependent on various factors, for example, the characteristics of the particular investment in comparison to other investments, applicable (taxation) legislation, related cost and the type of investor. There are different types of investors, for example, businesses, private investors and intermediaries or agents.

For the purposes of this study, the UKZN MBA students fall into the category of private investors as their investment purchases are solely for their individual benefit. The nature of a private investor requires investment products or processes that are readily available, understandable and affordable, even if an agent is to be used to broker a transaction. Accordingly, the characteristics of unit trusts, shares that trade on the stock exchange, insurance policies, government bonds and property make them suitable examples of products for use in research on the investment choices of the private investor, for example, an MBA student.

### 2.2.2. Decision-making and investing

Hodgkinson (2006) considers investing as a means of making money in addition to the money that is usually made from earnings and savings. The writer claims that investing is different from savings where there is no risk and little gain. The decision to invest or not to invest involves many of the factors that this chapter describes. However, decision-making is not without pressure as illustrated in an adaptation of the decision-making pressures model of Hannagan (2002), on the next page.

**Figure 2-1:** Decision-Making Pressures Model
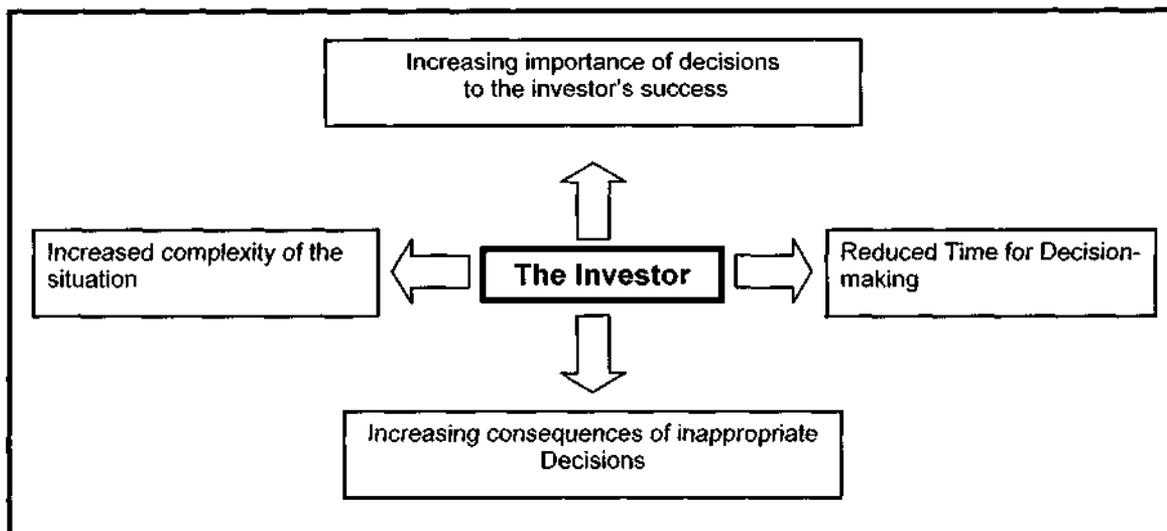


Adapted from Hannagan (2002).

According to the decision-making pressures model of Hannagan (2002), the individual investor is faced with the pressures related to the:

- reduced time available for decision-making (for example, trading on the stock exchange requires prompt action);

- increasing consequences of inappropriate decisions (for example, loss of life-time savings in purchasing a private business that went bankrupt);

- increased complexity of the situation (for example, purchasing property on mortgage after which there is a huge interest rate hike); and

- increasing importance of decisions to the investors success (for example, where a higher investment profit is importance for success, the investor may have to choose from investment in different unit trusts).

Hannagan (2002) emphasises that an essential step in the decision-making process is establishing objectives. Maginn and Tuttle (1990:17) categorise goals into near-term and long-term priority, lower priority and entrepreneurial or money-making goals based on a rational approach. According to the study, with age comes change in goals because of changing needs, attitudes, maturity and knowledge towards money (Maginn and Tuttle, 1990: 19).

Depending on a person's age, his or her life cycle view describes whether he or she is at the accumulation, consolidation, spending or gifting phase in his or her life (Maginn and Tuttle, 1990:20). They also come to the conclusion that age determines the level of risk the person is willing to take in each phase. However, the above writers

consider a major investment constraint to be that of liquidity, based on real needs and perceived needs.

Real needs for liquidity fall into the categories of emergency cash, goal spending, taxes and investment flexibility (Maginn and Tuttle, 1990). However, a different view is expressed by Shefrin (2002), who states that people often make decisions based on approximate rules of thumb, not strictly rational analyses and the way a problem or decisions are presented to the decision-maker will affect their actions. Brabazon (2000) on the other hand, states that using approximate rules of thumb may result in poorer decision-making and illusions, for example:

- *Representativeness:* This is when investors make decisions based on stereotypes because they see a particular pattern where the pattern may not actually exist. This is because they assume that recent events will continue in future.

- *Overconfidence:* This is when decision-makers overestimate their skill to predict a particular outcome and play the market at the right time to secure a win situation.

- *Anchoring:* This is when investors perceive the value scale of a particular investment to be fixed, for example where the trend of historical earnings is used resulting in the investor either not reacting or under reacting to a change in that trend.

- *Gambler's fallacy:* This is when the investor does not predict when a particular trend will reverse.

- *Availability bias:* This is when a speculator places undue weight only on information that is at hand when making a decision.

It is of interest to note that Shefrin (2002) suggests that the more experienced an investor is, the more he or she will act according to gambler fallacy while the less experienced investor may have somewhat of a more representativeness in his or her decision-making. Hodgkinson (2006) finds that another factor to consider in decision-making is the type of investment. The above writer describes investment in property as having an emotional pull with special appeal, for example, the potential investor can take a greater interest in the aesthetics of the tangible asset rather than in the related risks. Hodgkinson (2006) further explains that the pleasure and excitement of

purchasing something that can be seen and touched cannot be compared to buying equity, where there is no physical product to reduce the perceptions of risk.

It is essential to understand how private investors make investment decisions. The preceding paragraphs describe different theories relating to investor decision-making and investing in terms of the different factors faced by the investor. The following two paragraphs illustrate how the above theories apply to the proposed respondents of this study.

An investment is a means to making money, in addition to the earnings and savings of the participants to this study (Hodgkinson, 2006). Hannagan (2002) uses the Decision- Making Pressures Model to illustrate that it is essential for the prospective respondents to set objectives before investing. Owing to Maginn and Tuttle (1990) the prospective respondents categorise goals on a rational approach in terms of priority and such goals will change with the maturity, attitude and changing needs of the investor that comes with age.

In addition, Maginn and Tuttle (1990) advise that age determines the level of risk that a prospective respondent may take in the different phases of his or her life and that a major constraint to investment is liquidity. Shefrin (2002) has a different view and advocates that the participants may make decisions based on approximate rules of thumb and not on rational analysis. Brabazon (2000) does not recommend making decisions on the approximate rules of thumb as it may result in poorer decision-making by the members of the sample unit due to the illusion of representativeness, overconfidence, anchoring, gambler's fallacy or availability bias.

An overriding factor to consider when investing is the characteristics of the type of investment which may or may not have special appeal to a particular investor, for example the aesthetics of a particular property. The proposed empirical research should therefore consider some of the factors affecting the investing decisions of the participants, for example, characteristics of the investments and priorities and income of the investor.

### 2.2.3. Decision-making and risk-taking

Decision-making under conditions of risk and uncertainty were discussed in the Prospect Theory of Kahneman and Tversky (1979), and expanded by Brabazon (2000) as follows:

- *Loss aversion:* This is where the investor is more mentally concerned about the penalty of a loss than on a reward of the same size. However, this does not mean that such an investor is always consistent in his or her attitude to risk. The writer suggests that investors are willing to take chances when trying to correct a losing situation or when trying to protect a gain.

- *Regret aversion:* This refers to the situation where the investor tries to avoid feeling the pain of financial loss and the emotional pain of having made a choice that brought about the loss. The need to avoid regret may result in the investor avoiding a particular type of investment or market where he or she previously sustained a loss. The investor may hold on to a poorly performing investment instead of selling at a loss so as to avoid recognition of that loss.

- *Mental accounting:* This is where some investors mentally divide and treat each element of their investments separately. Owing to having separate mental accounts, investors sometimes vary in their attitudes towards each of these accounts: being risk averse where there is a necessity to play it safe, (for example, where an investor has a savings account for tertiary study), and willing to be more risky in speculative accounts (for example, where there is a mental separate account on a high interest rate consumer scheme).

- *Self control:* This stems from the separate mental accounting illusion, by the investors separating their accounts into what is to be maintained as safe and what is available to spend. Control is exerted over what could be lost from overspending.

Regardless of the type of investment, Strong (2004) advocates that risk aversion is unavoidable and always includes a "chance of loss" or a quantifiable uncertainty. He maintains his view that everyone takes risks, therefore risk aversion is not about risks not being taken but about the avoidance of risk, or the avoidance of the uncertainty of winning. In his explanation of the above, the writer reports that virtually most investors

are risk averse regarding significant amounts of money which means that they will only take a risk when they expect to be rewarded for it.

Marx *et al.* (2005), divide risk into non-financial and financial risk. Concerning pure or non-financial risk, these writers state that there is no monetary gain or implication in the exposure to the uncertainty, but, the risk is generally, "associated with pure danger or hazard". In their discourse, they suggest that financial risk is mostly associated with investments, "where investors face the risk of an unexpected decline in the value of their investments due to risk factors". Strong (2004) cited earlier, reports that based on the expected return, people have different degrees of risk aversion and an investor that is indifferent to risk is risk neutral.

Strong (2004) defines gamblers as risk seekers in that they actively seek out risky situations. The above writer also mentions that there is an important distinction between the probability of losing money and the amount of money that might be lost. However, when using the probability approach nothing is known about when the event will occur and over time even small losses can be a problem if too many of them occur (Strong, 2004). Strong (2004) further warns that depending on how risk is defined by the individual investor, the longer a common stock investment is held, the lower the likelihood that money will be lost but greater is the amount that the investor stands to lose.

Alexander, Sharpe and Bailey (2001) stress that the individual investor may analyse risk in terms of systematic risk (also referred to as portfolio market risk in the case of equities) that depends on a macro or pervasive factor, for example, the national economy, and unsystematic risk (or unique risk) that depends on localised factors such as the company or the industry itself. The above trend of thought is sustained by Strong (2004) who asserts that systematic and unsystematic risks comprising, company (or business), financial, industry (or sector), purchasing power, interest rate, foreign exchange and political risks may if not directly, then indirectly affect the individual investor as it most certainly affects the performance of every common stock in which the investor invests.

The findings of different researchers regarding the categories of risk are summarised below:

- Horcher (2005) lists the major market risks as commodity price risk, foreign exchange risk, interest rate risk and equity price risk. In addition, Horcher (2005) divides the financial risks into credit risk, operational risk, liquidity risk and systematic risk.

- Marx *et al.* (2005) cite Reilly and Brown (2000), who identify business risk, financial risk, liquidity risk, currency risk, political risk and convertibility as the major sources of risk.

- Brennan (2002) categorises risks according to mutual fund prospectuses as: market risk, specific risk, interest rate risk, credit risk, manager risk, income risk, investment style risk and inflation risk.

- The South African authors, Falkena *et al.* (1989), in addition to the above categories of risk include settlement risk and market liquidity risk in their comparative risk table.

Although institutions may approach risk-taking in a similar manner, Banks (2002) finds that defining what risks to pursue, maintain or mitigate and the amount of funds to commit or the level of expertise required is sector-specific. According to Hertz and Thomas (1993), the term "risk" may have a meaning that is dependent on the risk relative to the industry. They use the example of the specific meaning of risk within the insurance industry and state that there two categories of risk, namely, pure risks and speculative risks.

Business people prefer pure risk which is when the potential outcome has a chance of only loss as compared to speculative risks that involve a possibility of both loss and gain (Hertz and Thomas 1993). Lee (2005) considers fear to be the biggest obstacle when purchasing property and people's perception of money (and not the lack of money) as another stumbling block for potential investors. The researcher warns that this fear can be as a result of using a broker that is a "Chicken Little". Lee (2005) defines a Chicken Little as an agent who believes that every deal will fail for a variety of reasons.

The theories in the preceding paragraphs show that investment decisions are made under conditions of risk and uncertainty. An understanding of the above theories on decision-making and risk-taking is necessary for the formulation of appropriate

questions to be used in the empirical study to determine if the respondents' are risk averse. Accordingly, to assist in the drafting of suitable questions the following paragraphs are a summary of how the above theories may be relevant to the empirical study.

Strong (2004) finds that everyone takes risks therefore the proposed empirical study will not be about risks not being taken, but about the avoidance of risk by the participants to the study. In considering the questions to be asked in the proposed research, financial risks and non-financial risks that influence the investment decision of the participants will be taken into account (Marx *et al.*, 2005). It is also possible that the prospective participants to this study may be indifferent to risk or have different degrees of risk aversion, which could be dependent on their character or how they individually define risk (Strong, 2004).

Another aspect to be taken into account when formulating the questionnaire will be whether the respondents' risk aversion is based particular attitudes towards systematic (national risk) or unsystematic (localised) risk (Alexander *et al.*, 2001). In addition a prospective respondent's risk aversion when investing may also be influenced by the risk attitude and character of an agent, if advice is sought from an agent (Lee, 2005). Brennan (2002), Horcher (2005), Marx *et al.* (2005) and Falkena *et al.* (1989) provide various categories of risks that should also be considered in light of respondent attitude.

### 2.2.4. Other empirical studies related to the problem statement

Filbeck *et al.* (2005) advise that empirical evidence: "indicates that factors such as age, education, income, wealth, and marital status play an important role in distinguishing:

- risk tolerance among individuals;
- investor preferences for cash dividends ;
- investor aversion to realized losses; and
- investor confusion between good companies and good stocks ".

Filbeck *et al.* (2005) cite Malkiel (1996) who argues that, for individuals, assessing capacity for and attitude toward risk is the key to successfully implementing an investment policy. The above sentence shows the necessity of understanding the impact of risk attitude on decision-making for investment purposes and emphasises the

importance of this study in contributing information toward the drafting of national investment policies (for the male and female MBA graduate investment market).In order to explore the extent to which the UKZN MBA students are risk averse and whether there is a difference in terms of gender, it is necessary to review and analyse the below-mentioned findings on similar topics undertaken by other researchers.

According to Bloch (2006), researchers at the University of Cambridge found that almost one in five people in the U.K. suffered from what they described as financial phobia. He states that, "Financial phobia is a natural reaction of feeling sick at the sight of personal financial information but in the long run it can cost a lot of money". In the study it was established that nearly half of the sufferers experience a racing heart at the mere prospect of dealing with their money, while 15% feel frozen and immobilized, 12% feel ill and 11% become dizzy.

The above researcher further explains that a dread of financial issues and having to cope with them leads to dangerous behaviour such as an inability to deal with changes in investment situation and trusting or relying on the wrong people. His comment that the level of avoidance can allow debts to pile up and can put an investor at risk of being exploited was based on the statistics of the Cambridge study where women and younger people were more affected than older people and men.

Bloch (2006) is of the opinion that the Cambridge study suggests that many financial phobics are intelligent and perfectly competent in other areas of their lives but are dumb struck at the notion of dealing with their money. The writer states that regardless of the reason, the reality is that there are probably many people out there who simply hate to deal with investments and other financial matters. The writer further suggests that the problem is more prevalent among certain groups of people in light of their social class, age, sex and character which are all factors that influence who will suffer from this problem. However, in his article Bloch (2006) does not define what is meant by "certain groups".

In a study by Johnson, Uccello and Goldwyn (2003) it was found that the common stereotype that women are more risk averse than men is true. The results had a few caveats, in that it was found that men and women react differently to the framing of risks and that the risk attitudes of professional men and women are not generally different. Johnson *et al.* (2003), cite Byrnes, Miller and Schafer (1999), who analyzed 150 studies from 1967 to 1997, and also cite Arch (1993), who analyzed 50 studies.

They report that the results of both of the above research teams show that women are more risk averse than men. In their evaluation they consider the rationale of Arch (1993) who states that men see a risky situation as a challenge that requires participation while females tend to respond to these situations as threats that encourage avoidance.

The US study of Grable (2000) analysed demographic, socioeconomic and attitudinal characteristics as determinants of financial risk tolerance in everyday money matters. The results show that older married, professional men, with higher education, income and financial knowledge that had higher economic expectations are more risk tolerant. Graham *et al.* (2002) claim that gender (after age and income) is considered the third most powerful determinant of investing and that females are also less impulsive and not as confident as males when investing, which results in the reduction of the risk of money loss by women.

According to van Tonder (2006) it is possible that higher returns may be gained by women who trade less often due to their awareness of the potential risk. Based on the findings of Graham *et al.* (2002), female investors are more risk averse and have less confidence in their investment decisions than male investors in the same situation. However, Graham *et al.* (2002) found that there is little research on the underlying reasons for the gender differences and different investment strategies.

Johnson *et al.* (2003) suggest that while women are generally more risk averse, an exception are female managers and professional women who have similar risk preferences to their male counterparts. They confirm that their result is corroborated by the findings of Dwyer, Gilkeson and List (2002). Dwyer, *et al.* (2002), report that it is only the non-professional females that are more conservative in their investments, not the professional ones.

Holt and Laury (2002) find that as real incentives increases so do risk aversity for men and women. However, men are less risk averse in low-pay off decisions. Sunden and Surette (1998), report that married people chose less risky investments than single people. In the study of Jianakoplos and Bernasek (1998), the results show that single women are significantly more risk averse than single men.

Lisa Caputo, president and CEO of Women and Company, a division of Citigroup was reported in an article by Kinetz (2004), as saying that, "women view money different than men do, because to women, money is about life and the difference money

can make in defining and achieving their goal". Alternatively van Tonder (2006), finds that females prefer to be exposed to the same type of investments as their male counterparts even though they find some types of investments more appealing than others.

Kinetz (2004) further reports that the chairman and CEO of Citigroup's Global Consumer Group, Ms. Magner, said that in the United States of America ("USA"):

- more than half of the females over 65 years old are widows;
- approximately 50% of all marriages end in divorce impacting on the females' financial situation;
- women still earn 23.7. cents less for every dollar that a man earns; and
- that the average job tenure of a women is 4.8 years although pension plans only vest after the employee spends five years at the job.

Tischler (2006) stresses that even in instances where women place the burden of financial decision-making onto their partners, this burden will likely end up in the women's hands again as a women's life expectancy is greater than a man's. The above researcher reports that according to US Census Bureau data, about 90% of females will be solely responsible for making financial decisions at some point in lives. The researcher finds that when faced with an unexpected divorce or widowhood, women are unprepared for the challenge of making financial decisions on their own.

Finucane *et al.* (2000), find that among the different ethnic groups men rate a wide range of hazards as lower risk than do women and that there is no interaction between culture and gender. Anisya and Mueller (2000), report that there are no changes in gender differences in risk-taking between cultures. Atkinson, Baird and Frye (2003) suggest that where the research participants have similar investment knowledge, wealth constraints and position at work, there is little difference in their investment behaviour and choices.

In their attempt to study the effect of who makes investment decisions in married couple households, Bernasek and Shwiff (2001) report that unlike married women who are in the same situation, men who have spouses who are willing to take more risk, allocate larger portions of their defined contribution pensions to risky assets. Croson and Gneezy (2004), cite Hinz, McCarthy and Turner (1997) who found that even when

economic and demographic variables are constant, married women invest less in common stocks and more conservatively in pension funds than married men.

van Tonder (2006) cites Ronay (1999), where in a study undertaken by Deloitte and Touché, it was found that fifty percent (50%) of the female participants discuss financial matters with friends and sixty percent (60%) would rather buy products based on recommendations of a friend than that of a financial advisor. The study emphasises the fact that a personal relationship with the advisor will lead to long-term loyalty.

However, the results of van Tonder's (2006) study reveals that the participants (single females living in Gauteng) view the opinion of their financial advisors and not that of their friends, parents, colleagues, as most important. Lee (2005), cited earlier, warns that using a property advisor who is either a "Chicken Little" or a "Maverick" should be avoided. A Maverick is an agent that is a dreamer who claims to know it all, encourages every deal and is usually only interested in self gain to the investor's detriment.

The different views that are discussed in the preceding paragraphs are summarised in table 2-2, on the next page.

**Table 2-2: Summary of sub-section 2.2.4.**

| Researcher/s | Findings |
|---|---|
| Bloch (2006) | Most people that dread making personal investment decisions are intelligent and perfectly competent in other areas of their lives. Investment decisions of women and younger people are more affected by a dread of having to deal with personal financial information than older people and men. |
| Tischler (2006) | Financial decision-making will likely end up in the women's hands as a women's life expectancy is longer than a man's. |
| van Tonder (2006) | Females prefer the same type of investments as their male counterparts. Single females view the opinion of their financial advisors and not that of their friends, parents, colleagues, as most important |
| Johnson et al. (2003) | The common stereotype that women are more risk averse than men is true. Men see a risky situation as a challenge that requires participation while females tend to respond to these situations as threats that encourage avoidance. |
| Dwyer,et al. (2002) | Women are generally risk averse, but non-professional females are more conservative in their investments compared to the professional ones. |
| Graham et al (2002) | Gender (after age and income) is the third most powerful determinant when investing. Female investors are more risk averse and have less confidence in their investment decisions than male investors in the same situation. There is little research on the underlying reasons for the gender differences and different investment strategies. |
| Holt and Laury (2002) | As real incentives increases so does risk aversity for men and women. Men are less risk averse in low-pay off decisions. |
| Grable (2000): | Older married, professional men, with higher education, income and financial knowledge that have higher economic expectations are more risk tolerant. |
| Sunden and Surette (1998) | Married people chose less risky investments than single people. |
| Jianakoplos and Bernasek (1998) | Single women are significantly more risk averse than single men. |
| Finucane et al. (2000) | Among the different ethnic groups men rate a wide range of hazards as lower risk than do women and that there is no interaction between culture and gender. |
| Anisya and Mueller (2000) | There are no gender differences in risk-taking between cultures. |
| Atkinson, Baird and Frye (2003) | There is little difference in the investment behaviour and choices among people with similar investment knowledge, wealth constraints and position at work. |
| Bernasek and Shwiff (2001) | Married men are willing to take more risk, allocate larger portions of their defined contribution pensions to risky assets than married women. |
| Croson and Gneezy (2004) | Married women invest less in common stocks and more conservatively in pension funds than married men. |
| Ronay (1999) | Sixty percent (60%) of single females would rather buy products based on recommendations of a friend than that of a financial advisor. |

The above literature review highlights the academic relevance of this study, in that the extent of risk aversity in the investment strategies of MBA dissertation students and in particular the UKZN MBA students have not been examined by other researchers.

### 2.2.5. Information relating to the UKZN

The problem statement concerns the UKZN students. Therefore a brief overview of the university and a description of the MBA students are important to contextualise the sample for the empirical study.

According to the UKZN (2006a), the UKZN mission statement is: "A truly South African university that is academically excellent, innovative in research, critically engaged with society and demographically representative, redressing the disadvantages,

inequities and imbalances of the past". On its website, the UKZN (2006a) advises that it was formed by the merger of the former Universities of Durban-Westville and Natal on 1 January 2004. The website describes the university as one of the largest universities in sub-Saharan Africa that is located in two cities (Durban and Pietermaritzburg) and on five campuses (UKZN, 2006a).

In the booklet, UKZN @ a glance, the UKZN (2006b) claims that twenty seven percent (27%) of the students registered at the university are postgraduates and two hundred and seventy seven disabled students are registered, of which thirty four (34) are postgraduates. It states further that the alumni of the university consist of more than one hundred and twenty seven thousand (127 000) graduates spread across one hundred and twenty (120) countries (UKZN, 2006b).

The numbers of recent graduates are depicted in the table below.

Table 2-3: UKZN graduates by year

| | College | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Average |
|---|---|---|---|---|---|---|---|---|
| 1 | Agriculture, Engineering and Science | 1159 | 1181 | 1258 | 1391 | 1297 | 1413 | 1283 |
| 2 | Health Sciences | 448 | 377 | 518 | 574 | 574 | 703 | 532 |
| 3 | Humanities, Education and Social Sciences | 3249 | 2860 | 2824 | 3603 | 3169 | 3351 | 3176 |
| 4 | Law and Management Studies | 2406 | 2801 | 3120 | 3963 | 3329 | 2884 | 3084 |
| TOTAL | | 7262 | 7219 | 7720 | 9531 | 8369 | 8351 | 8075 |

Source: UKZN (2006a).

In the promotion of its Graduate School of Business ("GSB"), the UKZN (2006c) reports that the MBA degree has been offered by the UKZN for a period exceeding 32 years. The table, on the next page, is a breakdown of the number of MBA students in terms of contact (full time) and distance learning (part time) students and per campus.

Table 2-4: UKZN MBA student registrations-2006

| Degree | Campus | Part time | Full time | Total |
|---|---|---|---|---|
| MBA | WESTVILLE | 288 | 0 | 288 |
| MBAD | HOWARD COLLEGE | 1 | 1 | 2 |
| MBAD | WESTVILLE | 2 | 8 | 10 |
| MBA-D | HOWARD COLLEGE | 8 | 31 | 39 |
| MBA-D | WESTVILLE | 12 | 208 | 220 |
| MBA-P | PIETERMARITZBURG | 42 | 0 | 42 |
| | | 353 | 248 | 601 |

Source: UKZN (2006c).

The 249 dissertation students (also referred to as MBA 3 students) that registered in March 2006 at the GSB, in terms of gender, are illustrated in table 2-4 on the nex page.

**Table 2-5:** UKZN MBA dissertation students per gender and age

| Age | Male | Female | Total |
|-----|------|--------|-------|
| 25 | 1 | 1 | 2 |
| 26 | 1 | 0 | 1 |
| 27 | 0 | 3 | 3 |
| 28 | 4 | 4 | 8 |
| 29 | 11 | 4 | 15 |
| 30 | 12 | 8 | 20 |
| 31 | 10 | 9 | 19 |
| 32 | 38 | 8 | 46 |
| 33 | 40 | 5 | 45 |
| 34 | 5 | 8 | 13 |
| 35 | 40 | 7 | 47 |
| 36 | 14 | 10 | 24 |
| 37 | 9 | 4 | 13 |
| 38 | 13 | 6 | 19 |
| 39 | 10 | 1 | 11 |
| 40 | 3 | 6 | 9 |
| 41 | 4 | 2 | 6 |
| 42 | 1 | 0 | 1 |
| 43 | 7 | 0 | 7 |
| 44 | 5 | 0 | 5 |
| 45 | 2 | 1 | 3 |
| 46 | 1 | 1 | 2 |
| 47 | 2 | 2 | 4 |
| 47 | 2 | 1 | 3 |
| 48 | 3 | 0 | 3 |
| 49 | 3 | 2 | 5 |
| 50 | 1 | 1 | 2 |
| 54 | 1 | 1 | 1 |
| 55 | 1 | 1 | 1 |
| Totals | 163 | 86 | 249 |

Source: UKZN Administration Department, Westville Campus (2006).

The number of dissertation students that registered in March 2006 by population group, is illustrated in Table 2-5, on the next page.

**Table 2-6:** UKZN MBA dissertation students per population group

| Population group | Number of students – March 2006 | Number of students – September 2006 |
|---|---|---|
| Black | 100 | - |
| Coloured | 4 | - |
| Indian | 109 | - |
| Other | 0 | 0 |
| White | 36 | - |
| Total | 249 | 231 |

Source: Personal correspondence, GSB Administration Department (September 2006).

In September 2006, there was a reduction in the number of students to 231 due to students having completed their studies or deregistered from the university (personal correspondence, GSB Administration Department, 2006).

## 2.3. Elimination of problems solved by other researchers

The intent of the proposed research is to bridge the academic gap presented by the problem statement. As there is much general research on investment decision and risk aversion, it is important that the proposed empirical research does not duplicate work undertaken by previous studies. The studies analysed below are identified by the researcher as having a bearing on the proposed study, in that the studies provide possible solutions to aspects or elements of the problem statement. Accordingly, this subsection provides guidance on what issues will be eliminated from the empirical research.

According to the exploratory study of single females living in Gauteng, S.A., by van Tonder (2006), the respondents have enough monetary power to buy financial products and services. The statistics that van Tonder (2006) obtained from the January 2006 results of the All Media and Products Survey ("AMPS") illustrated, in Table 2-7, on the next page, show that of the different investment vehicles, 45% of the female participants prefer investing in a bank savings account, 36% in stockvel, 34% in unit trusts, 22% in a savings policy, 21% in shares and 4% in the money market.

**Table 2-7**: Statistics of single females living in Gauteng

| Single Female Statistics | Rand (R) |
|---|---|
| Number of single females | 1 074 252 |
| Number of single working females | 398 565 |
| Number who have a university degree | 20 700 |
| Number who earn an income between:<br>R5 000 and R5 999<br>R6 000 and R6 999<br>R7 000 and R7 999<br>R8 000 and R8 999<br>R9 000 and R9 999 | <br>23 020<br>18 202<br>11 345<br>9 751<br>1 128 |
| Number who have cheque accounts | 44 733 |
| Number who have a savings account | 231 433 |
| Number who have credit cards | 34 234 |
| Number who have life insurance | 60 816 |
| Number who have a pension policy | 33 023 |

Source: van Tonder (2006).

Maginn and Tuttle (1990) describe demographics as the fairly straightforward classification of people based on facts and circumstances such as age, wealth, income, family situation and occupation, whereas, psychographics describe psychological characteristics of people. Their analysis involves the process of classifying people based on their personalities and the needs that derive from them.

In terms of a gender based study by Jacobs-Lawson (2003), four demographic factors (age, income, marital status, and educational level), and four psychological variables (i.e., knowledge of retirement planning, retirement goal clarity, subjective risk tolerance, and future time perspective) were analysed to understand how these factors affected the retirement planning of females.

The findings of Jacobs-Lawson (2003) in the above-mentioned study indicate that developmental differences exist in the variables that influence women's asset allocations and the information women consider when making investment decisions. In terms of the responses, the researcher found that women with a higher knowledge of retirement planning were more risky and chose more options in their allocations for the younger hypothetical investor than in their allocations for the older hypothetical investor. She reports that regression analysis for the self-investment task failed to show that the demographic variables have a direct influence on allocation risk, but, with respect to the psychological variables subjective risk tolerance was positively related to allocation risk.

To date the most popular psychographic models are the Barnewall Two-Way Model of passive and active individual investors and the Bailard, Biehl and Kaiser Five-Way Model that classifies investor personalities into individualist, adventurer, celebrity, guardian and straight arrow types by focusing on two aspects of personality: the level of confidence and the method of action (Meyers,2006).

Herbst (2000) classifies individual attitudes towards risk according to the economic concept of utility, which is a measure of personal satisfaction. The writer defines greater utility as when something provides more pleasure (or less pain) than something else. According to the study the curve of a risk averter (or risk averse person) depicts diminishing marginal utility, the curve of the risk-neutral (or risk-indifferent person shows a constant marginal utility and the curve of a risk lover illustrates increasing marginal utility, suggesting greed. He further explains that most individuals have utility functions that exhibit properties of risk aversion, risk neutrality or risk seeking for different ranges of monetary values.

Schott and Arbeiter (1999) profiles investors as the: "I Can't Stop Worrying Investor", Power Investor, Inheritor, Impulsive Investor, Gambler, "Make Me Safe Investor", and the Confident Investor. Kathleen Gurney of the Financial Psychology Corporation classifies investors into the "Nine Money Personalities", which include profiles of: Safety Players, Entrepreneurs, Optimists, Hunters, Achievers, Perfectionists, Producers, High Rollers and Money Masters (Meyers, 2006).

A Swedish study by Keller and Siegrist (2006), identifies individual investors based on their attitude toward financial security, stock investing, obsession with money, perceived immorality of the stock market, gambling, interest in financial matters, saving, frankness about finances into four segment termed safe players, open books, money dummies, and risk-seekers. The above researchers report that each of these segments make different decisions regarding investment portfolios, risk tolerance, price changes, social and environmental responsibility and the purchase and sale of securities.

Strong (2004) considers the use of representativeness and availability heuristics, loss aversion, fear of regret, myopic loss aversion, herding, anchoring, an illusion of control, prospect theory mental accounting, asset aggregation, hindsight bias, overconfidence, framing, biased expectations and reference dependence as common established behaviours among investors. Bajtelsmit and van Derhei (1997) give a

hypothesized reason for the different risk attitudes as having to do with the perceptions of risk rather than the reactions to a given level of risk.

A Canadian study undertaken by Pond (1991), classifies investors according to their investment in real estate, as risk-tolerant investors (where the investors have "money to burn" or "wishes to go for broke" as a way to add earnings), risk-sensitive investors (who are interested in the size of the market relative to other assets and have heavy demands for cash to satisfy liability) and inflation-sensitive investors (who pay beneficiaries in real goods and services, not in nominal cash, for example health and retirement benefits).

The above review shows that the studies that have been undertaken by other researchers are limited to, for example, the classification of investors based on (1) psychometric models of personalities, or (2) demographics, or (3) marital status, (4) retirement planning, and (5) gender. Therefore, another reason for the relevance of the empirical study is that there is no study that provides an overall academic perspective on the attitudes (preferences), demographics and personal circumstances (constraints, expectations and objectives) of MBA dissertation male and female students, by collectively examining these attribute and behavioural variables.

## 2.4. Conclusion

A Concept Matrix was first developed to record themes and concepts as well as their appearances in the various articles read which formed the basis for the literature review. The themes and concepts recorded from the review of articles are presented in this chapter in a manner to lend structure to the review.

The information discovered during the review process helps to clarify the objectives and ascertain exactly what information is required from the respondents. The review assists in eliminating crucial issues related to the dissertation topic that have been already solved by other researchers. Gaps or problems related to the topic that have not been examined or been corroborated by other researchers are identified and will form part of the proposed empirical research. The process assists in refining the broadly proposed questions that were discussed in chapter 1, above.

Whilst many studies address risk in relation to investments, none of the studies attempt to compare the personal investment choices in relation to each other and in

quantitative and qualitative, and that the research question determines which to choose. Saunders, Lewis and Thornhill (2003) advises that where the results to the research question are a collation in numerical standardised data or interpreted according to meanings derived from numbers, or where diagrams and statistics are to be used for the analysis of the data, it is best that the quantitative paradigm be applied.

The table, below, highlights the differences in the characteristics of quantitative and qualitative techniques:

**Table 3-1**: Differences in quantitative and qualitative data and methods

| Quantitative Data Characteristics | Qualitative Data Characteristics |
|---|---|
| • Reality is objective and singular, apart from the researcher | • Reality is subjective and multiple as seen by participants in a study. |
| • Researcher is independent from that being researched | • Researcher interacts with that being researched. |
| • Unbiased and free of values | • Value-laden and biased. |
| • Language is: Formal; Based on definitions; Impersonal | • Language is: Informal; Based on evolving decisions; Personal |
| • Research process is: Deductive; involves showing cause and effect; Contains generalisations leading to prediction; explanation and understanding; Accurate and reliable through validity and reliability. | • Research Process is: Inductive; Emerging design – categories identified during the research process; Context Bound; Patterns, theories developed for understanding; Accurate and reliable verification |

Adapted from Klopper and Lubbe (2005).

The above table adapted from Klopper and Lubbe (2005) shows the most important characteristic differences between the quantitative and qualitative methods of research. A qualitative technique requires the researcher to interact with that being researched thereby making the research personal and open to possible bias. A qualitative method does not allow for generalizations leading to prediction and a reality that is objective and apart from the researcher. An analytical quantitative survey will ensure that research:

- is objective and singular (apart from the researcher);
- has independence, in that the researcher is independent from the research; and
- that is unbiased and free of values.

The table of Klopper and Lubbe (2005) shows that quantitative data will in addition to the above factors allow for:

- a quantitative analysis using inferential statistical methods;
- a deductive process allowing cause and effect relationships to show;
- generalizations about the data leading to prediction, explanation and understanding; and
- validity and reliability.

Owing to Klopper and Lubbe (2005) the type of responses that are required to address the problem statement and to achieve the objectives necessitate an empirical study of primary data to be collected by means of a quantitative survey. A reason for this choice is that the statistical characteristics of quantitative data collection are more practical in efficiently obtaining the desired objectives of proving that the UKZN MBA students are risk averse and in identifying the factors that indicate that they are risk averse (Klopper and Lubbe, 2005).

### 3.2.2. Population and Sampling

Laiho, Pietila and Djerk (2006) advise that (1) the goals of a statistical survey determine the target groups that form the population and (2) the purpose of the survey is to generalise the statistical results to the whole target population. The UKZN MBA 3 students are people who have completed or are about to complete their MBA degree and accordingly they should be well-equipped in terms of knowledge gained from their studies and they will have increased financial resources from job opportunities to make investment decisions (Pak and Tunca, 2004). As the goal of this survey is to understand the risk aversity of MBA students a survey population comprising all dissertation students of the UKZN that are registered for the MBA degree will be relevant.

Laiho *et al.* (2006) further suggest that the selection of a sampling method depends on a number of aspects, such as study design, population characteristics, availability of sampling frames, data collection method and costs. The lack of availability, the logistical difficulty in meeting with these students, the most suitable data collection method and the related costs under these circumstances are factors that will influence on the choice of sampling for this study.

The members of the sample unit will comprise the students of the Westville campus that are undertaking a dissertation for the requirements of the MBA degree.

This choice of sample will be suitable as the proposed participants are about to finish an MBA degree and will therefore have money and knowledge to invest, but more importantly for convenience, in that they are located in a single campus which assists the researcher from a time and resource perspective. The sample will therefore include the full-time students that attend lectures and the distance-learning students that reside in other provinces and overseas but are registered at the Westville campus.

Lucey (2002), states that sampling is the cheaper, quicker and only feasible method of finding information about a population. In the circumstances the reasons that will prohibit the observation of the entire population in this study are limited resources and restrictions on available time and money (Devore and Peck, 2005). Therefore for the purposes of the empirical research the entire population will not be surveyed but a sample of approximately one hundred and forty (140) students will be used (Devore and Peck, 2005).

Lucey (2002) advises that the overall objective of sampling is to select a representative a sample as possible, without bias, at a realistic cost. Devore and Peck (2005) claim that the only assurance as to whether a sample is representative of the population from which it is drawn comes from the method used to select the sample. The above authors explain that bias in sampling is where the sample is different from the corresponding population in some systematic way and that the effect of bias is to prejudice or unfairly influence data quality.

In practice, bias can be deliberate or unconscious (Pink, 2005). However, Devore and Peck (2005) suggest that bias may be because of the way in which the sample is selected (sample frame bias) or from the way in which the information is measured or obtained once the sample has been chosen, called researcher bias. Therefore to avoid bias, the qualifying criteria for gathering representative participants for the empirical study means that all of the respondents should have the same characteristic of the original sample with regards to their current MBA dissertation registration at the Westville campus.

White (2000), comments that pure random sampling, which is where every member in the population has an equal chance of being chosen, requires a sampling frame. Welman and Kruger (2001) advise that the use of the referral technique for the research will ensure that prospective participants do not conform to ethnic or gender stereotypes. As it is crucial that the respondents to this study, present views on risk and

investment that are as varied as possible. The referral technique will ensure that the study is not confined to any particular stereotype thereby ensuring that the outcomes are not restricted. However, Lucey (2002) cautions that complete sampling frame may be difficult to obtain because:

- even where lists are available the lists are often inaccurate or out of date;
- there are circumstances where a full sampling frame is not feasible;
- the population may be continually growing and changing; and
- the costs of constructing a sample frame may be prohibitive and greater than the benefits of increased confidence in the accuracy of sample estimates.

Cooper and Schindler (2006) define snowball sampling as a non-probability sampling procedure in which subsequent participants are referred by current sample elements. The above writers state that the referrals may have characteristics, experiences, or attitudes similar to those of the original sample. Snowball sampling is a convenient method that may be used to find alternate participants that are representative of the original sample in circumstances where the proposed participants are not readily available (Welman and Kruger, 2001).

The restrictions facing the research (discussed above), necessitate the gathering of participants for the proposed empirical study to be on the basis of the snowball sampling method. Based on the snowballing technique, the researcher will request the current respondents to refer, at their own choice, the contact details of subsequent students who may want to participate in the research and who are current UKZN dissertation students. The snowball sampling method of referral will therefore be implemented until the desired number of responses is obtained to ensure a reliable and representative sample (Welman and Kruger, 2001).

Krejcie and Morgan (1970) advise that the number of respondents determines the degree of validity with which the results of the research may be generalised to the population. The writers provide information in the form of a comprehensive statistical guideline to illustrate the appropriate size for a sample for research activities that is based on the corresponding size of the survey population, for example, for a population that consists of ten people a sample size of ten respondents is required. Owing to Krejcie and Morgan (1970), as this study has a population consisting of approximately two hundred and thirty (230) MBA dissertation students, an appropriate sample size will

be one hundred and forty four dissertation students of the Westville campus of the UKZN.

### 3.2.3. Research Instrument

Laiho *et al.* (2006), state that paper or electronic questionnaires may be used to collect regular or infrequent routine data. Leedy and Ormrod (2004) find that the use of a questionnaire relies on self-report data where the participants present information about themselves. The above writers explain that based on the designs, the questionnaire may be classified according to two factors: the administration mode (who enters the data) and whether the instrument is an electronic one or a paper version (the technology applied).

In the context of this study, the nature of the required responses are such that it will be best to collect the primary data using the written tool of a questionnaire as opposed to observational methods. The questionnaire will be the best option to obtain the respondents own views because of the preference for a self-enumerated administration mode. Pink (2005) also provides motivation for the use of a questionnaire in this study, as they state that the questionnaire is an inexpensive method that is useful where literacy rates are high and respondents are co-operative. Given the logistics of the physical access to the respondents, the questionnaire shall have two technologies of data acquisition, namely, paper and electronic mediums.

Laiho *et al.* (2006) recommend that in order to facilitate the filling out of forms and the data entry in a structured format, the questionnaire should ideally be machine-readable, or at least laid out with data fields clearly identifiable and responses pre-coded. The above writers further suggest that writing on the questionnaire should be reduced to a minimum and preferably limited to numerals. In addition, Laiho *et al.* (2006), cited above, indicate that an open-ended format, keywords and other structuring procedures should be imposed to facilitate database entry and analysis, if necessary.

Concerning the maximisation of response rates, Laiho *et al.* (2006), recommend further that the questionnaire design should be as simple and clear as possible, with targeted sections and questions. Following the guidelines of Laiho *et al.* (2006), the questions for this study will be simple and clear, special care will be taken to avoid overburdening the respondent by the use of simple language, and further the questionnaire should be as short as possible as it will be used for a complete

enumeration. To ensure that the proposed questionnaire will not too laborious to answer, it will be limited to approximately twenty-six questions and the answers will be limited to numerals.

### 3.2.4. Questionnaire Construction

Carol (2006) reports that questionnaires, like interviews, can contain either structured questions with blanks to be filled in, multiple choice questions, or open-ended questions where the respondents are encouraged to reply at length and choose their own focus to some extent. In addition, the writer explains that open questions elicit unstructured responses, whereas, closed-ended questions elicit structured responses. The choice between open and closed questions depends on the general research problem, the types of data researchers seek, and where the researcher wants to place the onus of interpretation (Carol, 2006).Based on Carol (2006) the information required will best be gathered by the use of a structured questionnaire as standardised responses and not open-ended responses are sought from the participants. The table 3-2, below, shows the advantages and disadvantages of open and closed questions, (Carol, 2006):

Table 3-2: Advantages and disadvantages of open and closed questions

| Open Questions | Closed Questions |
|---|---|
| • Tend to be slower to administer. <br><br> • Can be harder to record responses. <br><br> • May be difficult to code, especially if multiple answers are given. <br><br> Do not stifle response. Enable respondents to raise new issues. <br><br> • Respondents tend to feel that they have been able to speak their mind. <br><br> • In self-administered questionnaires, respondents might not be willing to write a long answer and decide to leave the question blank. <br><br> • Blank answers cannot be used in the analysis. <br><br> • Can use open questions to find out all the possible responses before designing a closed-ended questionnaire. | • Tend to be quicker to administer. <br><br> • Often easier and quicker for the researcher to record responses. <br><br> • Tend to be easy to code. Respondents can only answer in a predefined way. <br><br> • New issues cannot be raised. <br><br> • Respondents can only answer in a way which may not match their actual opinion and may, therefore, become frustrated. <br><br> • Is quick and easy for respondents to tick boxes – might be more likely to answer all the questions. <br><br> • Can include a section at the end of a closed-ended questionnaire for people to write in a longer response if they wish. |

Adapted from Carol (2006).

The guidelines of Carol found in table 3-2 above, show that if closed-ended questions instead of open-ended questions are used:

- it saves time to administer the questionnaire;
- it makes for easier and faster data capture of the responses;
- the respondents can only answer in a predefined manner making it easier to code the responses; and
- it is more likely that the respondents' answer more or all of the responses because it is quicker and easier for the respondents to encircle the answers (of the printed questionnaires) or insert the numbers corresponding to the answers (of the electronic questionnaires).

Although the closed-ended questions will prevent other or new issues about risk aversity from being raised and there is the chance that the respondents may become frustrated because they will be able to only answer in a way which may not match their actual opinion, the use of closed-ended questions will be more appropriate than the open-ended questions to constrain unnecessary investment related information from being obtained.

The first objective of this study is to find the factors that indicate that the students are risk averse. Therefore the questions to be posed to the respondents will be carefully phrased so that the factors that indicate their risk aversion are clearly identifiable. The second objective of the study is to prove that the students are risk averse. To achieve this objective, closed-ended questions that directly ask the respondent whether he or she is risk averse will be used to confirm whether or not the students are risk averse. The third objective is to determine if there are any differences in the attitudes of the male and female students in their investment strategies in terms of risk aversion. This objective will be achieved by comparing the results of objective one and objective two, in relation to gender disparities.

### 3.2.5. Variables

Saunders *et al.* (2003), cite Dilman (2000), when they state that the information that can be obtained for analysis through questionnaires consists of almost any data variable, namely opinion, behaviour and attribute variables. The above writers also advise that opinion variables record how respondents feel about something or what they think or believe is true or false, whereas, attribute variables are characteristics of the

respondent, for example, age, gender, occupation and income and the behavioral variables contain simple information on what people did in the past, are doing at present, or will do in future.

The proposed questions that relate to the investment strategy of the respondents will concern the respondents' past, present and futures circumstances and will therefore be behavioral variables in nature. The demographic answers will be of a nature that describes the respondents, and therefore the related questions should be of the nature of attribute variables. The precise variables included in the questions are described in table 3-3. Laiho *et al.* (2006), however, advise that the variables contained in a questionnaire are opinions and not a direct measurement, and may therefore be subject to serious errors.

### 3.2.6. Quantitative techniques and scales

Wittse (2006) provides examples of fixed response or quantitative scales that include yes/no responses, multiple choice, rating scale or continuum and rank ordering scales. Owing to Wittse (2006), fixed response questions will be suitable for the questions on risk aversion because the questions are simple and quick to answer. However, Wittse (2006) warns that the use of fixed response questions may draw misleading conclusions because the respondents cannot qualify their responses, for example, where only "Yes/No," are given as options (Wittse, 2006). Wittse (2006) describes a rating scale as a type of scale that has many variations and requests that the respondents rate some item or quality on a specific scale.

Saunders *et al.* (2003) advise that quantitative data can be classified into either categorical or quantifiable data. In their explanation of quantitative data, Saunders *et al.* (2003) describe quantifiable data as data which is more precise than categorical data as the values can be quantitatively measured and it is possible to assign each data value a position on a numerical scale. Saunders *et al.* (2003) cite Morris (1999) who states that continuous data, which is a sub-category of quantifiable data, is data whose values can theoretically take any value provided that accurate means are available to measure them (for example, the measurement of time).

Discrete data is a sub-category of quantifiable data where each variable takes one of a finite number of values from a scale that measures change in discrete units allowing for precise measurement, for example the number of customers in a queue (Saunders *et*

*al.*, 2003). The numbers of persons that make up a household vary across the respondents, therefore a discrete type of question in the form of filling in the blanks will be used to gather the answers.

Categorical data is data to which values cannot be measured numerically but can be categorised and placed in rank order (Saunders *et al.*, 2003). Ordinal data is a sub-category of categorical data where values are assigned to objects based on their ranking with respect to one another, for example where the value 1 represents shares in a private business and the value 10 represents shares in a public company (Lane, 2002). The use of ordinal data will therefore be appropriate to rate the different types of investments and investment strategies in relation to each other, based on the respondent preference.

Nominal or descriptive data is another sub-category of categorical data which simplifies the data collation process by obtaining standardised responses owing to the categorization of data (Saunders *et al.*, 2003). Based on the explanation of Saunders *et al.* (2003), nominal type data comprising questions that are multiple-choice in relation to the choice of the answers will therefore be more useful that quantifiable data in obtaining the demographic information required of the respondents.

The responses to scaled questions are graded on a continuum, for example where the participant is asked to rate the preference of an investment product on a scale from 1 to 10, with 10 being the most preferred choice reference (Cooper and Schindler, 2003). A Likert scale is a scale in which respondents indicate their level of agreement with statements that express a favourable or unfavourable attitude toward a concept being measured (Cooper and Schindler, 2003:253). Numerical values are assigned to each degree of favourableness and the scores can be totalled to measure the respondent's attitude (Cooper and Schindler, 2003:253).

The information that is required from the participants will entail a measurement of their attitudes towards investing and risk aversion. Therefore within the context of the study the use of a Likert scale will be the most practical tool as it measures attitude and is also a categorical ordinal scale in nature (Clarke, 2000). Questions that are continuum and mutually exclusive in nature will therefore be suitable for the investment related information required of the respondents.

Cooper and Schindler (2003) advise that values should be assigned to the descriptions of the variables for the purposes of measurement and analysis (of risk

aversion). By using an even number of points, it is possible to exclude a neutral option on the scale such as 'not sure' and thereby force the respondent to express their feelings (Saunders *et al.*, 2003). Converse and Presser (1986) suggest that a mid-point in an odd numbered scale allows respondents to "opt out" which in turn provides uninformative data, therefore even numbered scales provide a much needed benchmark. It is practical that this study should use even number scales to prevent the respondents from opting out.

Bruce (2001) advises that ten (10)-point scales will make the distinctions between the choices in this study finer therefore 10-point scales should be applied in this study to provide for greater discrimination with regard to the extent of the respondents' perceptions regarding investing and risk aversion. One of the requirements of this research is to delineate the strategies of male and female investors therefore the use of an even number scale is required to show the different choices. Applying the guidelines of Cummings and Gullone (2000) to this study, the research design should use end-defined scales to offer a form of rating (from 1 to 10) which lies within common experience and which will produce increased sensitivity to the proposed questions.

### 3.2.7. Validity and Reliability

The criteria required to ensure good research design are construct validity, reliability, internal validity and external validity (Klopper and Lubbe, 2005). According to Laiho *et al.* (2006), reliability of the research instrument is crucial to the process of research methodology and is a measure of how consistent the results of using a questionnaire will be. By use of the term "consistent," Laiho *et al.* (2006) mean that respondents understand the true meaning of the question as it is stated. The Cronbach Alpha Test will be applied to statistically measure the validity and reliability of the variables of this study.

Chang (1994) advises that reliability is independent of the number of scales points. Cummings and Gullone (2000), in their measurement of the subjective quality of life, report that expanding the number of choice-points beyond 5 or 7 Likert scale points does not systematically damage scale reliability, but increases scale sensitivity. Cummings and Gullone (2000), state that an increasing number of recent authors use 10-point end-defined scales and argue that the descriptions of the variables for the

purposes of measurement of the Likert scale categories detracts from the interval nature of the derived data. They therefore recommend the use of 10-point end-defined scales.

### 3.2.8. Methods for administering and collecting primary data

Concerning data collection methods, Laiho *et al.* (2006) highlight the most important factors as survey design (which is the selection of sampled units), probable response and non-response rates, the survey timetable, the cost of data collection and the quality of the final results. In addition, Laiho *et al.* (2006) suggest that different data collection methods allow for different sample sizes and the number of respondents determines the degree of reliability with which the results may be generalised to various population segments (Laiho *et al.*, 2006).

Pink (2005) advises that the choice of data collection method is not an isolated decision in survey design as it influences the statistical survey process. For instance it impacts on the design and preparation of the questionnaire, on the quantity and quality of the data that is to be collected, on the cost and on the timetable of the survey (Pink, 2005).

It is important to distinguish between the mode of administration of data collection and the technology applied in data acquisition. In this study it is preferable that the respondents should answer the questions by themselves using the self-administration mode. To facilitate this requirement the questionnaire will be administered via the two technologies of data acquisition, in that the responses will either be marked on paper questionnaires or on electronic media (Pink, 2005). The above writer cites a hand-delivered questionnaire as an example of a self enumeration administered survey. The application of such method will be useful to obtain higher response rates than a postal survey (Pink, 2005).

It is convenient that the questionnaire will be administered by hand to the current students attending research methodology lectures or using the library of the GSB, at the university campus. A meeting will be arranged with the MBA Research Coordinator and the GSB Librarian to explain the nature of the study and obtain their permission to approach the students to participate. The nature of the survey and instructions to complete the questionnaire will be reiterated to the students, and their permission obtained prior to administering the questionnaire. The participants will be requested to complete the questionnaire on the same day and the questionnaire will be collected

thereafter. Where the questionnaire cannot be administered by hand in that the participants are not physically present on campus, then the questionnaire will be sent electronically to the participants.

It is essential that the electronic technology will be easily accessible by the participants and that it will be effective and efficient to facilitate the delivery and collection of the questionnaires. Saunders *et al.* (2003) recommend the use of e-mail as it is the quickest method to deliver and collect the questionnaire. Another reason according to Saunders *et al.* (2003) that the use of e-mail will be preferable, in comparison to a facsimile delivered questionnaire, is that the questionnaire sent via e-mail ensures greater control in ensuring that the participant and no one else will read and respond to the questionnaire.

In addition Witmer *et al.* (1999), as *cited* by Saunders *et al.* (2003), recommend that e-mail should be used in research because most users of e-mail have their own personal e-mail addresses and generally a computer for their own use. The use of e-mail will be most appropriate method as all UKZN students have access to personal e-mail accounts and to computers via the UKZN information technology facilities. A list of MBA dissertation students will be obtained from the GSB and the questionnaire will be administered via e-mail to the students on such list.

Follow-up e-mails, reminding the participants to respond will be sent after the first week of not receiving a response. Should no response be received a week after the first reminder, a telephone call will be made to the participant requesting a response, followed by a second e-mail reminder a week thereafter. Should no response be received after a month of having sent the questionnaire, it shall be assumed that the intended participant will not respond.

### 3.2.9. Analysis and statistics

Mason, Lind and Marchal (2004) define statistics as the science of collecting, organizing, presenting, analyzing and interpreting data to assist in making more effective decisions. In addition, they describe a statistical test as a procedure for statistical hypothesis testing. The above researchers report that statistical tests do not prove or disprove anything, instead, the tests give a measure of probability of a particular situation arising by chance or some other cause. They explain that statistics divides into two categories: descriptive statistics and inferential statistics. White (2000),

cited earlier, reports that descriptive statistics make use of tables and figures, together with a brief explanation, to describe the respondent data and to augment the survey.

Lucey (2002), also cited earlier, defines statistical inference as the process of analysis of sample data and advises that inferential statistics makes use of the concepts of probability (significance tests) and population. White (2000) argues that tests of significance can also be used in respect of correlation, as opposed to difference. Swinscow (1997) describes correlation as a statistical technique to measure the association between quantitative variables. It clarifies that the association is linear when one variable increases or decreases a fixed amount for a unit increase or decrease in the other (Swinscow, 1997).

According to Swinscow (1997), the application of the Pearson and the Kendall's tau correlation coefficients are to measure the linear association as follows:

- the degree of association is measured by a correlation coefficient on a scale that varies from + 1 through 0 to - 1;
- complete correlation between two variables is expressed by either + 1 or -1;
- when one variable increases as the other increases the correlation is positive;
- when one decreases as the other increases it is negative; and
- complete absence of correlation is represented by 0.

Lane (2002) recommends that the use of the Kendall's tau rank correlation coefficient (or simply the Kendall's tau coefficient or Kendall's τ), as it will be ideal to measure the degree of correspondence between two rankings (on an ordinal scale) and to assess the significance of the correspondence as follows:

- if the agreement between the two rankings is perfect (where the two rankings are the same) the coefficient has value 1;
- if the disagreement between the two rankings is perfect (where one ranking is the reverse of the other) the coefficient has value -1;
- for all other arrangements the value lies between -1 and 1, and increasing values imply increasing agreement between the rankings; and
- if the rankings are completely independent, the coefficient has value 0.

The use of the chi-square test in categorical data analysis will assist in checking if two different variables (where one is on the nominal scale) are independent random variables (Bruce, 2001). Bruce (2001) explains that assuming that there is no association

between the study variables and where "p" is representative of the probability of getting a value that is more extreme than the one observed then:

- if the p value is less than or equal (p≤ 0.10) statistically there is significant difference between the study variables; and

- if the p value is greater than (p>0.10) statistically there is significant difference between the study variables.

Before the respondent information can be statistically analysed, it must be coded. White (2000) explains that coding is achieved by working through the questionnaire and allocating each separate idea, concept or question identified with a separate code (White, 2000). For the purposes of this study, the collected data should be on a quantitative scale of ten levels to observe if there is any dispersion in the different levels. The questionnaire will therefore be coded to capture the information on to the SPSS software version 13 programme and the data will then be interpreted according to meanings derived from numbers, diagrams and statistics.

The evaluation of the data will therefore require the application of significance tests. Such analysis will entail the use of Chi-Square, Kendall's tau, Cronbach Alpha, Mann-Whitney U, Wilcoxon and T-tests, so that two or more of the quantitative variables will be measured with each other to see the association. Descriptive and inferential statistical survey analysis will be undertaken in order to generalise the end results to the whole population. All of the respondent data will be presented using pie diagrams and tables.

## 3.3.  The questionnaire to be used in this study

### 3.3.1.  Developing the questions

The question whether the participant is a UKZN MBA dissertation student will help establish if the respondent falls within the sample being surveyed. The development of table 3-3, on the next page, was undertaken to match the actual survey questions to the research questions (that were broadly stated in Chapter 1, above) and to determine the survey variables and question types for each.

**Table 3-3** Overview of the development of the research questionnaire

| Research Questions | Survey Questions | Variable(s) and/or Relationships measured | Question Type | Research Questions |
|---|---|---|---|---|
| • demographic information | 1. I am a:<br>(1) male (2) female<br><br>2.1 fall into the following age bracket:<br>(10 options here)<br><br>3. I am an UKZN MBA dissertation student:<br>(1)Yes    (No)<br><br>4. I am:<br>(1) Black   (2) Coloured<br>(3) Indian  (4) White<br><br>5. Currently I am:<br>(10 options of vocation)<br><br>6. The total monthly net income to my household is approximately:<br>(6 options of income groups)<br><br>7. My household income is derived from:<br>(10 options of income sources)<br><br>8. My household consist of:<br>____ adults, and<br><br>____ Dependants. | 1. Gender<br><br>2. Age<br><br>3. MBA dissertation registration<br><br>4. Population group<br><br>5. Vocation<br><br>6. Total monthly net household income<br><br>7. Source of income<br><br>8. Household composition<br><br>(1) number of adults, and<br><br>(2) number of dependents | 1. Multiple choice<br><br>2. Multiple choice<br><br>3. Multiple choice<br><br>4. Multiple choice<br><br>5. Multiple choice<br><br>6. Multiple choice<br><br>7. Multiple choice<br><br>8. (close-ended question, limited to the inserting of numeral data)<br><br>8.1. Fill in the blanks<br><br>8.2. Fill in the blanks | 1. Dichotomous (only 2 possible categories (mutually exclusive)<br><br>2. Nominal (more than 2 categories, mutually exclusive and ordered)<br><br>3. Dichotomous (only 2 possible categories (mutually exclusive)<br><br>4. Nominal (more than 2 categories, mutually exclusive and ordered)<br><br>5. Nominal (more than 2 categories, mutually exclusive and ordered)<br><br>6. Nominal (more than 2 categories, mutually exclusive and ordered)<br><br>7. Nominal (more than 2 categories, mutually exclusive and ordered) |

| | | | | |
|---|---|---|---|---|
| • investment information, in terms of the types and strategy preferred | Q3.10: I would rather take the risk of investing on my own than trust an investment broker<br><br>Q3. 11: It is likely that I would first invest in a government bond<br><br>Q3.12: I would rather invest in the shares of a private business than a public company<br><br>Q3.17: How likely are you to invest in the property market?<br>Q3.18: How likely are you to invest in the stock exchange?<br><br>Q3.19: I am likely to invest in retirement annuities<br><br>Q3.20: I am likely to invest in unit trusts | Question 10: Strategy based on attitude towards risk and usage of brokers<br><br>Question 11: Preference for low risk with a guaranteed return<br><br>Question 12: Preference for either stable or volatile shares<br><br>Question 17: Preference for long-term security<br><br>Question 18: How likely are you to invest in the stock exchange<br><br>Question 19:Preference for stable, consistent long term returns<br><br>Question 20:Preference for volatile, risky, short term investment | Questions 10, 12, 19, and 20: Ten point scaled response from Strongly Agree to Strongly Disagree<br><br>Questions 11,17 and 18: Ten point scaled response from very likely to very unlikely | Questions 10,11, 12,19 and 20: Ordinal (more than 2 categories, mutually exclusive and ordered) |
| • objectives of the investment decisions | Q3.14: I have an insurance policy only because it is required in order for my home loan to be granted<br><br>Q3.15: I have an insurance policy only because of my employer's employment policy<br><br>Q3.16: I would not invest in a pension fund if it were not compulsory at my place of work<br><br>Q3.21: As you get older are you going to spend more or less on your investments | Question 14:<br><br>investment is necessary to secure liability<br><br>Question 15:investment is to compensate for potential risk<br><br>Question 16:investment is compulsory<br><br>Question 21:long term plan to increase or decrease investment and related risk | Questions 14, 15 and 16: Ten point scaled response from Strongly Agree to Strongly Disagree<br><br>Question 21: Ten point scaled response from a lot more to a lot less | Questions 14,15,16 and 21: Ordinal (more than 2 categories, mutually exclusive and ordered) |

| | | | | |
|---|---|---|---|---|
| • questions relative to understanding the expectations of the investors | Q.12: I would rather invest in the shares of a private business than a public company<br><br>Q13: I would likely spend money on a guaranteed investment return than any blue chip share | Question 12: to have direct control over vehicle of risk *(in terms of preference for either stable or volatile returns)*<br><br>Question 13: the need for stable guaranteed returns regardless of return rate | Questions 12: Ten point scaled response from Strongly Agree to Strongly Disagree<br><br>Questions 13: Ten point scaled response from Very likely to Very unlikely | Questions 12 and 13: Ordinal (more than 2 categories, mutually exclusive and ordered) |
| • constraints in making investment decisions | Q3.9: If I made my investment decisions on my own I would take greater risks.<br><br>Q22: If I had more dependants my propensity to invest will increase<br><br>Q24: If my income increased, I would be less cautious in my investment strategy<br><br>Q25: If I got a new job, I will increase the number of my investments<br><br>Q26: If my income doubled, I would increase the amount of money I invest | Question 9: decision making power affects choice of risk (own preferences limited)<br><br>Question 22: limitation of personal responsibilities on propensity to invest<br><br>Question 24: constraint of income on the degree / attitude of risk<br><br>Question 25: constraint of job on the investment amount<br><br>Question 26: constraint of income on the investment amount | Questions 9, 22 and 26: 10 point scaled response from Most likely to most unlikely<br><br>Question 24 and 25: 10 point scaled response from considerably to not at all | Questions 9, 22, 24,25 and 26: Ordinal (more than 2 categories, mutually exclusive and ordered) |

| questions related to the attitudes toward risk | Q3.9: If I made my investment decisions on my own I would take greater risks<br><br>Q3.10: I would rather take the risk of investing on my own than trust an investment broker<br><br>Q3.11: It is likely that I would first invest in a government bond<br><br>Q.12: I would rather invest in the shares of a private business than a public company<br><br>Q13: I would likely spend money on a guaranteed investment return than any blue chip share<br><br>Q3.23: To what degree are you scared to invest<br><br>Q24: If my income increased, I would be less cautious in my investment strategy | Question 9: preference to towards greater risk<br><br>Question 10: preference of cautious strategy<br><br>Question 11: Preference for low risk with a guaranteed return<br><br>Question 12: preference for either stable or volatile returns<br><br>Question 13: preference for minimum guaranteed returns compared to uncertain loss or gain<br><br>Question 23: degree of risk aversity<br><br>Question 24: effect of level of income on the degree / attitude toward risk | Questions 10, 12 and 24: Ten point scaled response from Strongly Disagree to Strongly Agree<br><br>Questions 9, 11 and 13: Ten point scaled response from very likely to very unlikely<br><br>Question 23: Ten point scaled response from very much to very little | Questions 9,10,12 13, 23 and 24: Ordinal (more than 2 categories, mutually exclusive and ordered) |
|---|---|---|---|---|

### 3.3.2. Introductory message

Saunders *et al.* (2003), cite Dillman (2000), who state that the content of the messages in the covering letter, which is generally the first page of the questionnaire, influences the response rate. The questionnaire developed for the purpose of this survey will have an introduction that contains similar information to that which is traditionally contained in such covering letters recommended by the above writers.

Contained in the first part of the questionnaire will be information relating to the university, faculty, supervisor and researcher, the topic, voluntary participation, procedure to answer questionnaire, the personal contact details and signature by the respondent. Another paragraph will include guidelines on how to answer the questionnaire and emphasises the confidentiality obligations of the researcher not to disclose any of the respondent's answers other than for the purpose of this survey. The questionnaire will be signed by each participant so that his or her permission to use the information is recorded.

The intent of the above measures is to ensure that the participant will be aware of the confidential nature of the answers and his or her right not to answer any or all of the questions of the questionnaire. The above will assist in ensuring that the responses are truthful especially as the questions relate to personal information concerning the participant and his or her household as well as employment (income related data).

Prior to the administration and hand delivery of the questionnaire, the participants will be briefly introduced to the topic and all of the above information will be verbally conveyed to the participants. The participants that receive the questionnaire electronically will be introduced to the topic and informed of the above information on the face of the e-mail and not in a separate letter attached to the questionnaire.

### 3.3.3. Actual questionnaire for distribution

The questionnaire once approved by the supervisor was submitted for ethical clearance. A certificate of approval from the UKZN Ethics Committee is attached hereto, as Annexure 4. The questionnaire used in the research is attached hereto, as Annexure 2.

## 3.4. Conclusion

This chapter sets out the best method to be used in each step of the proposed quantitative survey. It assists in understanding how to draft and scale the questionnaire, the procedure and timing to administer the research instrument, and how to collate, analyse and present the results.

The sample frame of the study will be the MBA dissertation students of the UKZN which comprises approximately 231 students. The sample unit will be approximately one hundred and forty (140) male and female students that are registered for dissertation purposes towards an MBA degree at the UKZN Westville campus. Based on the literature review of research methodology it was found that the survey method of research, using quantitative techniques and a structured written questionnaire is the most appropriate for the study.

Essential to the success of the survey method is that the respondents must be willing to participate and to answer any or all of the questions posed. The questionnaire will be administered by hand or where the students are physically not at the Westville campus, the questionnaire will be sent to them via e-mail.

The responses will then be coded and thereafter analysed from patterns in the answers according to statistical indexes from which the researcher will be able to draw inferences from the particular responses. The SPSS programme will be used to collate, code, analyse and present the data. The next chapter, Chapter 4, will present all of the answers of the respondents in a collated format.

Chapter 4

# 4. Presentation of the findings of the empirical research

## 4.1. Introduction

The preceding chapter explained the data gathering process that was implemented for the purpose of the empirical research. This chapter presents all of the data obtained from the answers of the respondents. Sub-section 4.2 of this chapter presents the descriptive statistical analysis of the respondent data. Sub-section 4.3 presents the comparison statistics for gender differences and similarities that are based on a descriptive analysis of the demographic and the investment strategy data of the respondents. Sub-section 4.4 presents the data obtained from the use of inferential statistical methods. All of the findings will assist in the analysis and interpretation of the data set out in chapter 5.

A copy of the questionnaire that was used in the survey is attached to this dissertation as Annexure 2. Part 2 of questionnaire addresses the demographic factors of gender, age, current MBA dissertation registration at the UKZN, population group, vocation, income, source of wealth and family composition. Part 3 of the questionnaire contains eighteen questions of which each question relates to either a different type of investment or the different reasons for making particular investment decisions. Based on the questionnaire that was distributed to the sample unit, the responses were as per the table, below.

**Table 4-1** Responses to the Questionnaire

| Description of responses | No of Questionnaires | (%) |
|---|---|---|
| Completed responses used in the research | 90 | 64 |
| administered via e-mail | 80 | 80 |
| administered by hand | 10 | 20 |
| Incomplete or defective responses | 7 | 5 |
| Non qualifying responses due to respondents not being representative of population group (not MBA dissertation students of the UKZN) | 8 | 6 |
| Non returns | 35 | 25 |
| Total number administered (sample unit) | 140 | 100 |

The 64% response rate was considered acceptable for the sample unit in terms of acceptable research sampling size for master's level research and the analysis was done based on the ninety qualifying responses.

## 4.2.  Descriptive statistical analysis of respondent data

### *Question 1: Respondent Gender*

The number of female MBA dissertation students investors compared to that of the male MBA student investors is 40 and 50, respectively. This ratio is independent of age, population group, vocation, household composition, and income. The figure below reflects the gender dispersion of the respondents.

**Figure 4-1:** Question 1: Respondent Gender
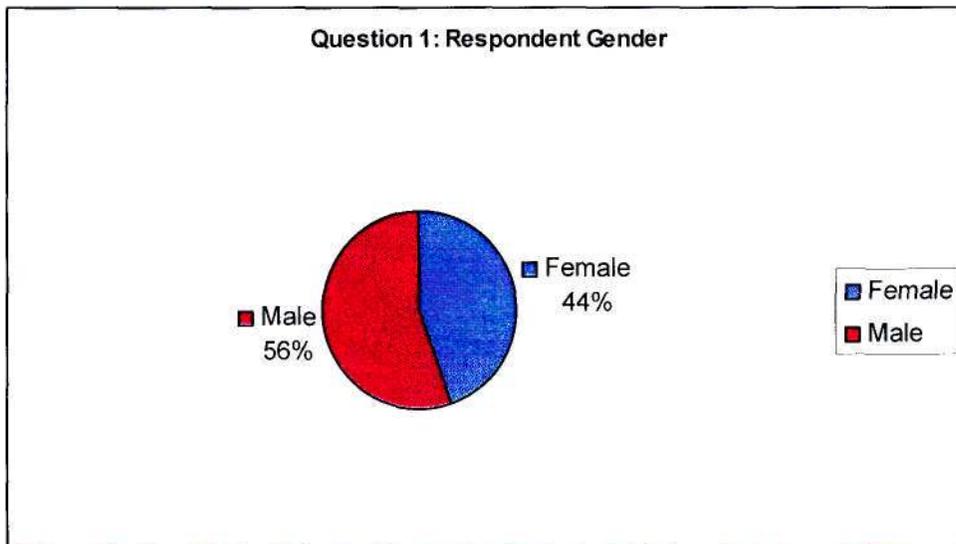
## *Question 2:    Respondent Age*

To analyse the investment strategies of the respondents based on the human life cycle, the demographic factor of age was categorised according to different age groups. Respondents were requested to state into which age brackets they belong. No questionnaire was given to persons over 55 years old. Based on the answers received, the number of participants for each of the above age groups is summarised in a table 4-3, and illustrated graphically in figure 4-2, below.

**Table 4-2** Question 2: Respondent Age

| Coding | Age Bracket | Number of participants | Percentage % |
|---|---|---|---|
| 1 | 21-25 | 0 | 0 |
| 2 | 26-30 | 10 | 11 |
| 3 | 31-35 | 40 | 45 |
| 4 | 36-40 | 27 | 30 |
| 5 | 41-45 | 9 | 10 |
| 6 | 46-50 | 3 | 3 |
| 7 | 51-55 | 1 | 1 |
| 8 | 56-60 | - | - |
| 9 | 61-65 | - | - |
| 10 | 65-70 | - | - |
| | Total | 90 | 100 |

**Figure 4-2:** Question 2: Respondent Age
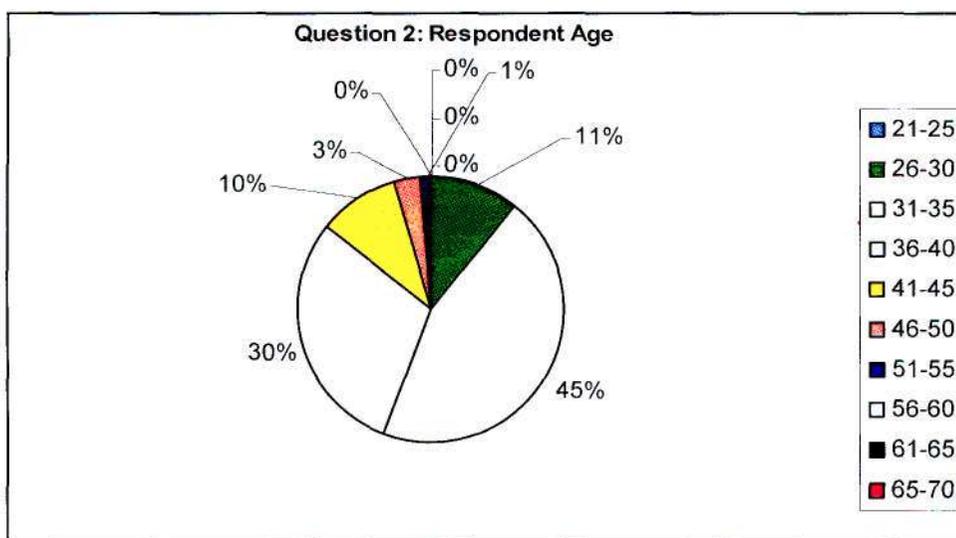
### *Question 3: UKZN MBA dissertation respondents*

Critical to this study is whether the respondents are students that were undertaking a dissertation for the requirements of an MBA degree. The intention of the survey is to research the investment strategies of the UKZN MBA students. Therefore, only a response that has question three in the affirmative, that is, where the participant indicated that he or she is a MBA student registered at the Westville campus of the UKZN was included for analysis in this study. For the purposes of this research, respondents who did not meet the above-mentioned profile, were not part of the sample unit and therefore respondents who answered question 3 of the questionnaire in the negative were not included.

**Table 4-3:** Question 3: UKZN MBA dissertation students

| UKZN MBA dissertation student (registered at the Westville Campus) | Number of Respondents | Percentage % |
|---|---|---|
| Yes | 90 | 100 |
| No | 0 | 0 |
| Total | 90 | 100 |

**Figure 4-3:** Question 3: UKZN MBA dissertation students registered at the Westville campus
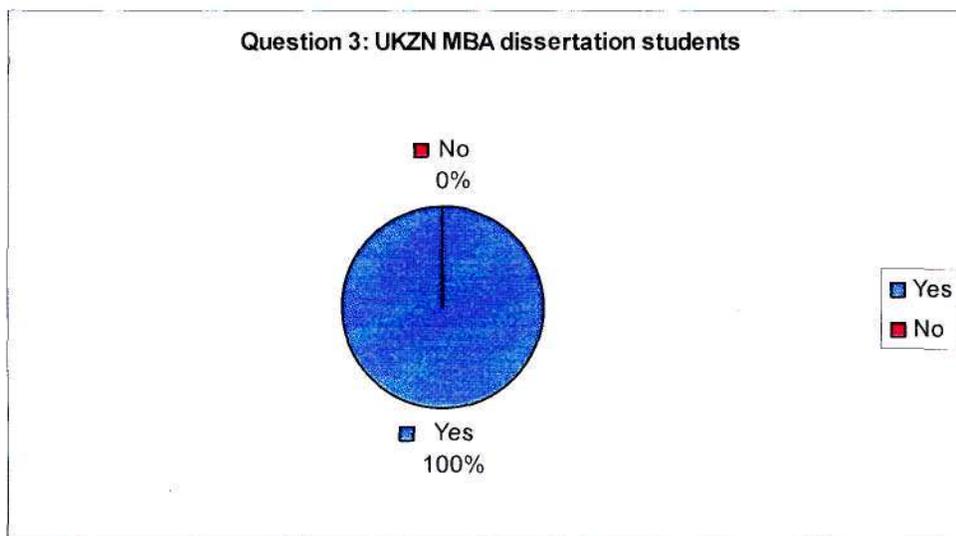
## Question 4:  Respondent population group

Given South Africa's historical political, economic, and social divisions based on population group, it is essential to research whether or not population group is still a differentiating factor on the investment strategies of THE UKZN MBA dissertation students. Accordingly, the participants were requested to specify whether he or she falls in to the Black, Coloured, Indian, or White population groups. Table 4-4 and Figure 4-4, below, reflects the population group dispersion of the respondents.

**Table 4-4:** Question 4: Population group

| Population group | No of respondents | Percentage (%) |
|---|---|---|
| Black | 30 | 33 |
| Coloured | 2 | 2 |
| Indian | 40 | 45 |
| White | 18 | 20 |
| Total | 90 | 100 |

**Figure 4-4:** Question 4 Population group
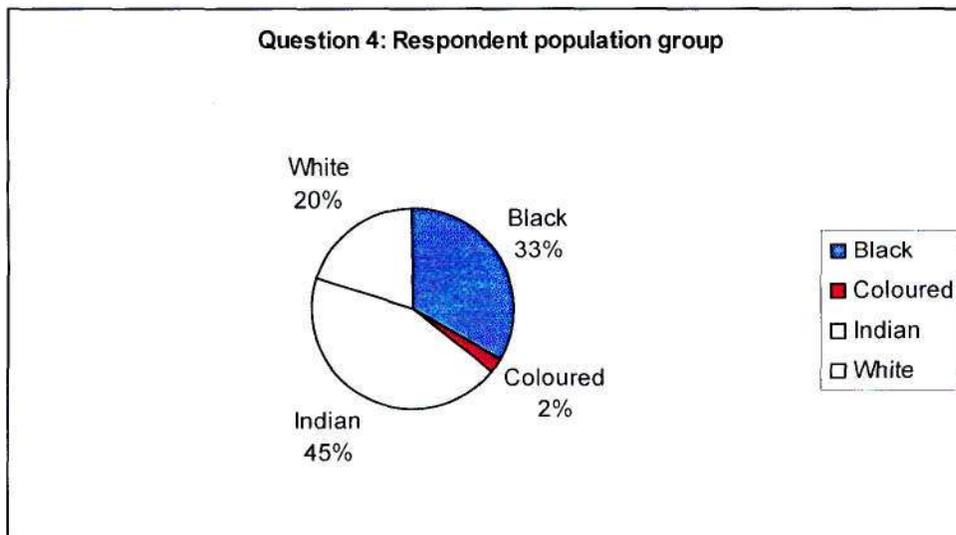
## *Question 5: Respondent Vocation*

With reference to whether the student's vocation affected his or her investment strategies, the participants were requested to choose from the following different types of vocation, ranging from being a student to being self-employed. Table 4-5 and Figure 4-5, below, reflects the vocation dispersion of the respondents:

**Table 4-5:** Question 5: Vocation

| Options | Vocation | Number of Participants | Percentage (%) |
|---|---|---|---|
| 1 | Unemployed | 0 | 0 |
| 2 | Employed by the government | 21 | 23 |
| 3 | Employed by a corporate | 53 | 59 |
| 4 | Employed in a family business | 3 | 3 |
| 5 | Retired | 0 | 0 |
| 6 | A consultant | 6 | 6 |
| 7 | Self employed | 6 | 6 |
| 8 | Employed on a part time basis | 1 | 1 |
| 9 | A home executive | 0 | 0 |
| 10 | A full time student | 0 | 0 |
| | Total | 90 | 100 |

**Figure 4-5:** Question 5: Vocation



- 59 -
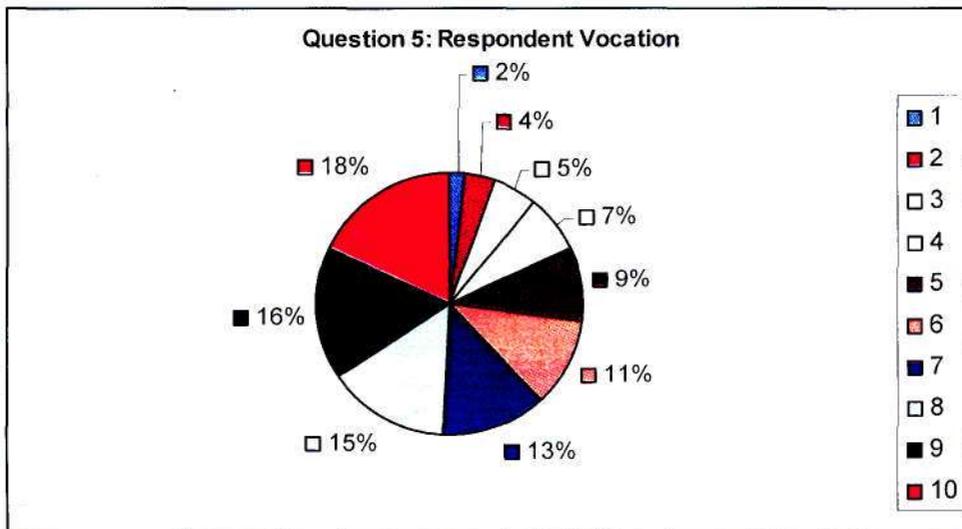
### Question 6: Respondent Household Net Monthly Total Income

Concerning the answer the question: "Do the participants choose different investment strategies because of their household income?" the participants were requested to specify their joint household net monthly income according to the different choices of income brackets in the questionnaire. Table 4-6 and Figure 4-6, below, reflects the income group dispersion of the respondents:

**Table 4-6:** Question 6: Respondent Household Income

| Options | Income Group | No of Respondents | Percentage |
|---|---|---|---|
| 1 | R0-R10000 | 1 | 1 |
| 2 | R11000 - R 15000 | 3 | 3 |
| 3 | R16000 - R 20000 | 11 | 12 |
| 4 | R21000 - R 30000 | 26 | 29 |
| 5 | R31000 - R 40000 | 45 | 51 |
| 6 | Greater than R100 000 | 4 | 4 |
| | Total | 90 | 100 |

**Figure 4-6:** Question 6: Respondent Household Income



- 60 -
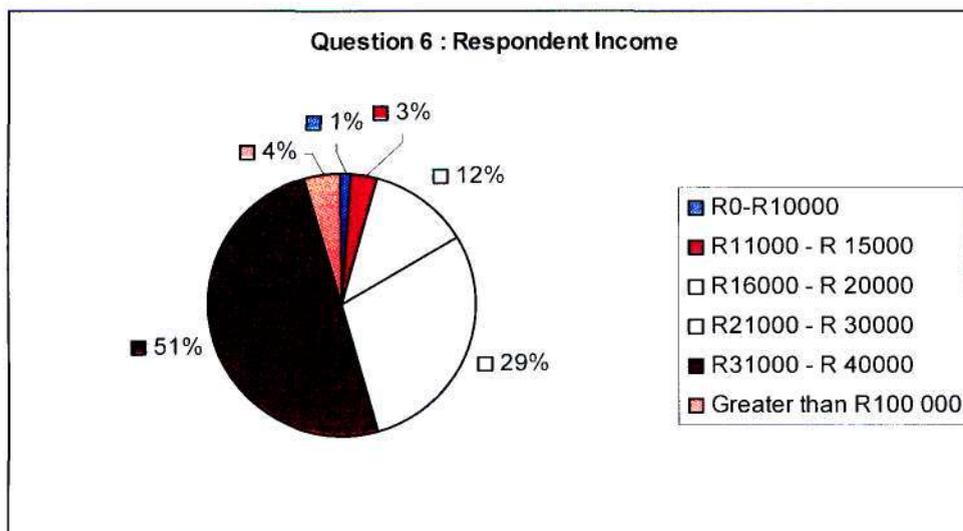
## Question 7: Wealth

Before a person is able to invest and have an investment strategy, he or she requires money. Whilst a person's vocation determines their income, it is not always his or her household's source of wealth. Therefore, the participants were also requested to specify their other sources of wealth from the list of ten possible sources. The table 4-7, below, shows the wealth dispersion of the respondents:

**Table 4-7** Question 7: Sources of income

| Category | Description of Options | No of respondents | Percentage (%) |
|---|---|---|---|
| 1 | Salary | 60 | 67 |
| 2 | Private pension | 0 | 0 |
| 3 | Maintenance | 0 | 0 |
| 4 | Trust fund | 0 | 0 |
| 5 | Dividends | 2 | 2 |
| 6 | Business Profits | 2 | 2 |
| 7 | Inheritance | 1 | 1 |
| 8 | Government Grant | 0 | 0 |
| 9 | Other | 1 | 1 |
| 10 | Interest from a savings account held at the bank | 0 | 0 |
| 1and5 | Salary, Dividends | 3 | 1 |
| 1and6 | Salary, Business Profits | 5 | 1 |
| 1and7 | Salary, Inheritance | 1 | 1 |
| 1and9 | Salary, Other | 2 | 1 |
| 6and7 | Business Profits, Inheritance | 1 | 1 |
| 7and3 | Inheritance, Maintenance | 1 | 1 |
| 1and10 | Salary, Interest from savings | 4 | 4 |
| 1and7and9 | Salary, Inheritance, Other | 1 | 1 |
| 6and10 | Business Profits, Interest from savings | 1 | 1 |
| 6and7and9 | Business Profits, Inheritance, Other | 1 | 1 |
| 1&6&7&9 | Salary, Business Profits, Inheritance, Other | 1 | 1 |
| 1&9&10 | Salary, Other, Interest from savings | 1 | 1 |
| 6&8&10 | Business Profits, Government Grant, Interest | 1 | 1 |
| 1&5&6&7&9&10 | Salary, Dividends, Business Profits, Inheritance Other, Interest from Savings | 1 | 1 |
| Total | | 90 | 100 |

### *Question 8:    Household Composition*

The number of income earners (adults) and the number of dependents (children, elderly parents etc) in a home may affect the investment strategies made by the members of that household. For instance, a household with one adult and two dependants may invest differently from a household with two adults and two children. A request was made to the participants of this study to specify each of the number of adults and dependants in their homes. A summary of the household composition of the respondents is in the Table 4-8, below:

**Table 4-8:** Question 8: Household Composition

| No of Adults | No of Households | % | | No of Dependents | No of Households | % |
|---|---|---|---|---|---|---|
| | | | | 0 | 33 | 36.7 |
| 1 | 8 | 8.9 | | 1 | 19 | 21.1 |
| 2 | 54 | 60.0 | | 2 | 20 | 22.2 |
| 3 | 18 | 20.0 | | 3 | 10 | 11.1 |
| 4 | 6 | 6.7 | | 4 | 2 | 2.2 |
| 5 | 4 | 4.4 | | 5 | 4 | 4.4 |
| | | | | 6 | 1 | 1.1 |
| | | | | 7 | 1 | 1.1 |
| Total | 90 | 100 | | Total | 90 | 100 |

### *Question 9: If I made my investment decisions on my own, I would take greater risks*

This question was posed to understand whether the investor would take greater risks (in terms of either the investment amount or the degree of associated risk) if the investment decision was made by himself or herself. Based on a scale of very likely (point 1) to very unlikely (point 10), the results were as follows:

**Table 4-9:** Question 9

| Coding | Number of Respondents | Percentage (%) |
|--------|-----------------------|----------------|
| 1 | 6 | 7 |
| 2 | 5 | 6 |
| 3 | 8 | 9 |
| 4 | 8 | 9 |
| 5 | 0 | 0 |
| 6 | 29 | 31 |
| 7 | 11 | 12 |
| 8 | 14 | 16 |
| 9 | 1 | 1 |
| 10 | 8 | 9 |
| Total | 90 | 100 |

**Figure 4-7:** Question 9
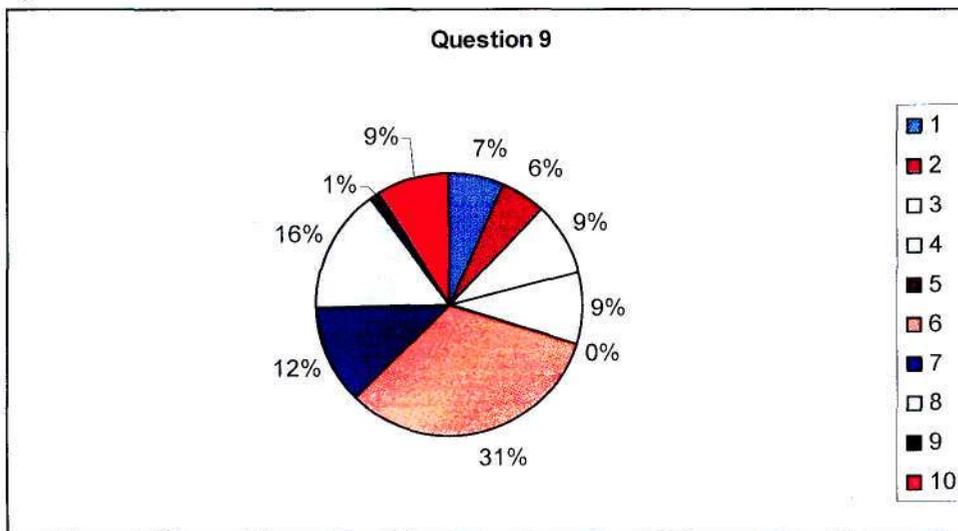
### *Question 10: I would rather take the risk of investing on my own than trust an investment broker*

This question posed was to understand whether the investor's strategy of making his/her own investment decision would be different if he or she had more trust in an investment broker who could make decisions on the investor's behalf. Based on a scale of whether the investor strongly agrees (point 1) to strongly disagrees (point 10) that he or she would rather take the risk of investing on his/her own than trust an investment broker, the results were as follows:

**Table 4-10:** Question 10:

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 10 | 11 |
| 2 | 2 | 2 |
| 3 | 6 | 7 |
| 4 | 9 | 10 |
| 5 | 0 | 0 |
| 6 | 13 | 14 |
| 7 | 8 | 9 |
| 8 | 21 | 24 |
| 9 | 12 | 13 |
| 10 | 9 | 10 |
| Total | 90 | 100 |

This number of respondents per each rating on the scale is shown graphically in Figure 4-8 below.

**Figure 4-8:** Question 10
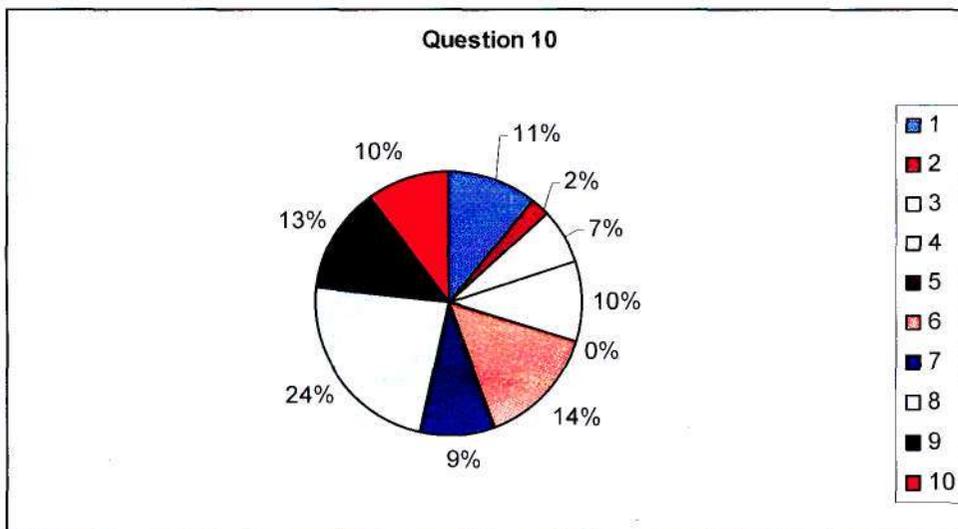
### Question 11: It is likely that I would first invest in a government bond

This question is part of the series of questions aimed at establishing which type of investment MBA dissertation students prefer. The likelihood of the participants investing in government bonds is summarised in the table below, where point 1 indicates that it is very likely, to point ten that indicates that it is very unlikely that the MBA dissertation student will invest in government bonds:

**Table 4-11**: Question 11

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 7 | 8 |
| 2 | 4 | 4 |
| 3 | 8 | 9 |
| 4 | 4 | 4 |
| 5 | 17 | 19 |
| 6 | 0 | 0 |
| 7 | 6 | 7 |
| 8 | 9 | 10 |
| 9 | 13 | 14 |
| 10 | 22 | 25 |
| Total | 90 | 100 |

Figure 4-9 illustrates the above data graphically. It shows that fewer respondents prefer investing their savings in government bonds.

**Figure 4-9:** Question 11



- 65 -
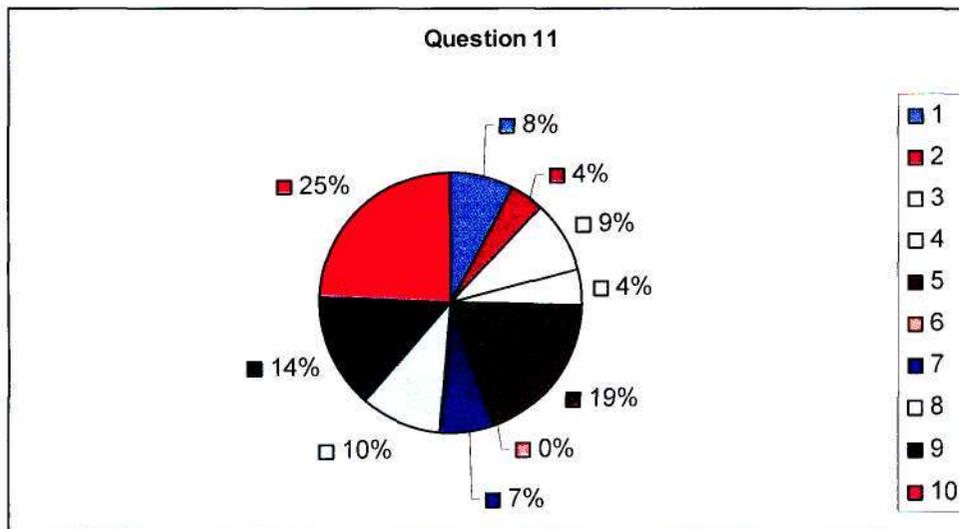
## Question 12: Shares private company versus shares in a public company

This question is part of the series of questions (questions 11 to 20) aimed at establishing which types of investment are preferred by MBA dissertation students. The likelihood of the participants investing in either the shares of a public or private company is summarised in the table below, where point 1 indicates that the respondent strongly agrees and point ten indicates that the respondent strongly disagrees that the MBA dissertation student will invest in either the shares of a public or private company:

**Table 4-12**: Question 12

| Coding | Number of Respondents | Percentage (%) |
|--------|-----------------------|----------------|
| 1 | 9 | 10 |
| 2 | 3 | 3 |
| 3 | 8 | 9 |
| 4 | 6 | 7 |
| 5 | 0 | 0 |
| 6 | 18 | 20 |
| 7 | 14 | 16 |
| 8 | 12 | 13 |
| 9 | 10 | 11 |
| 10 | 10 | 11 |
| Total | 90 | 100 |

**Figure 4-10**: Question 12
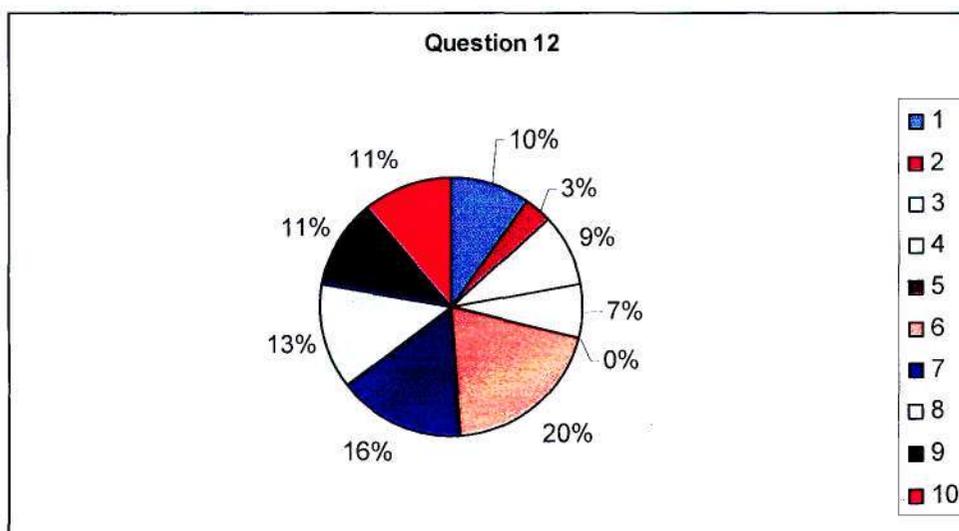
### *Question 13: I would rather spend money on a guaranteed investment return than any blue chip share*

Investing in the shares of blue chip companies where there is no guarantee on the earnings is considered more risky than an investment that guarantees a fixed return. Therefore, an investor that seeks a guaranteed return has a higher degree of risk aversity compared to the investor seeking blue chip shares. The following table (where option 1 indicates the preference for guaranteed returns and option ten indicates the preference for blue chip shares) summarises the responses of the participants:

**Table 4-13**: Question 13

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 15 | 17 |
| 2 | 11 | 12 |
| 3 | 5 | 6 |
| 4 | 8 | 9 |
| 5 | 0 | 0 |
| 6 | 19 | 21 |
| 7 | 12 | 13 |
| 8 | 10 | 11 |
| 9 | 4 | 4 |
| 10 | 6 | 7 |
| Total | 90 | 100 |

This data as illustrated graphically in Figure 4-11, below, indicates that more UKZN students prefer to invest in blue chip shares and are therefore less risk averse than those that spend money on investments with guaranteed returns.

**Figure 4 -11**: Question 13
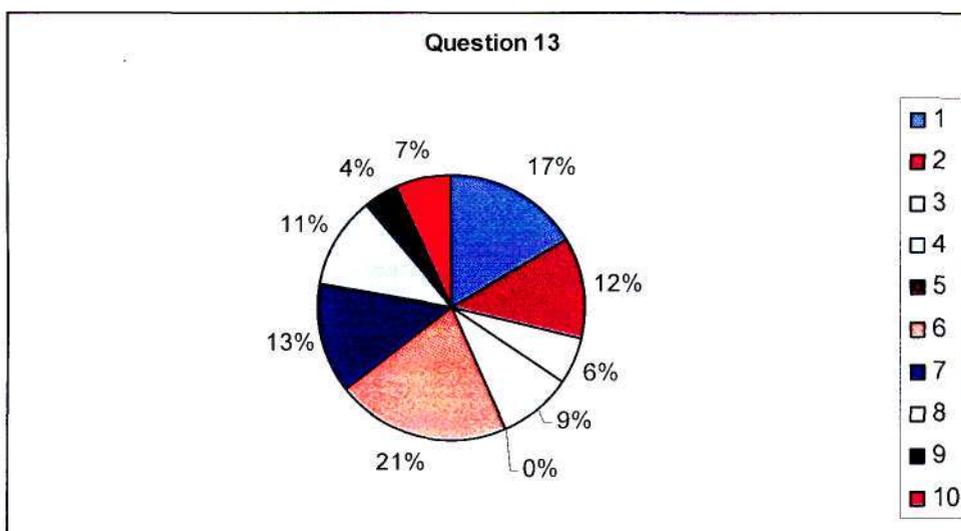
### *Question 14: I have an insurance policy only because it is required in order for my home loan to be granted*

It was practice among the South Black banks to request an insurance policy as cession to the bank as surety of a mortgage bond in the event of death or serious disability to the person responsible for payment of the bond. It was only required where the person acquiring the finance did not have any other surety to cede to the bank. Therefore the objective to invest in an insurance policy was, in such instance, not based on choice per se, but as a means to acquire finance for the purchase of a home bond.

The following table (where option 1 indicates that the respondent strongly agreed that the objective for insurance is not for investment purposes, but a bank requirement and option 10 indicates that the respondent strongly disagrees because his or her objective based on self-choice) summarises the responses of the participants:

**Table 4-14:** Question 14

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 19 | 21 |
| 2 | 7 | 8 |
| 3 | 4 | 4 |
| 4 | 4 | 4 |
| 5 | 0 | 0 |
| 6 | 8 | 9 |
| 7 | 6 | 7 |
| 8 | 11 | 12 |
| 9 | 7 | 8 |
| 10 | 24 | 27 |
| Total | 90 | 100 |

**Figure 4-12:** Question 14
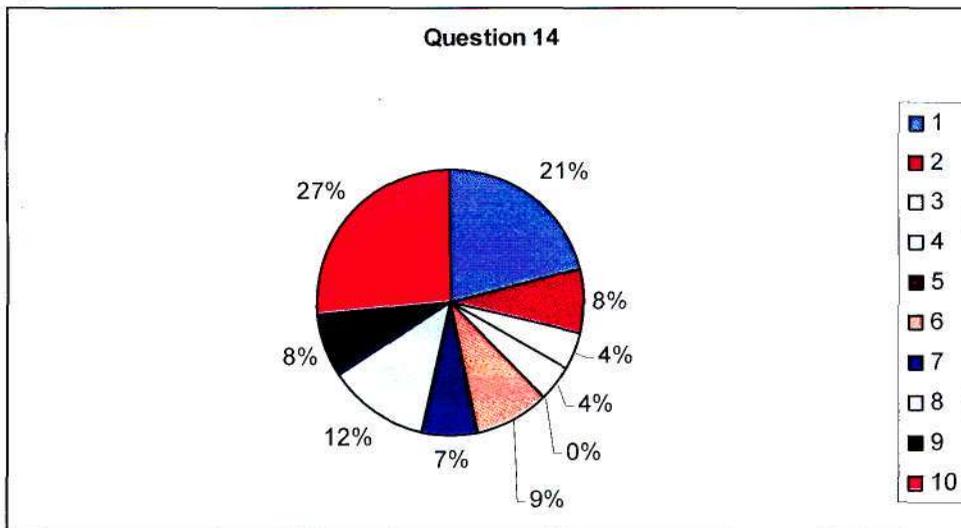
### Question 15: I have an insurance policy only because of my employer's employment policy

Depending on the nature of the business, there may be great potential for physical harm or professional liability to the respondent. It is therefore general practice for businesses to insist upon every employee having personal insurance in the event of such potential risks, and in some instances, the businesses sponsor a portion of the insurance costs (which is also sometimes deducted from the employee's salary).

The following table (where option 1 indicates that the respondent strongly agreed that the objective for insurance is not for investment purposes, but an employer requirement and option 10 indicates the that the respondent strongly disagrees because his/or her objective is based on self choice) summarises the responses:

**Table 4-15:** Question 14

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 9 | 10 |
| 2 | 3 | 3 |
| 3 | 3 | 3 |
| 4 | 1 | 1 |
| 5 | 0 | 0 |
| 6 | 10 | 11 |
| 7 | 8 | 9 |
| 8 | 12 | 13 |
| 9 | 12 | 13 |
| 10 | 32 | 37 |
| Total | 90 | 100 |

**Figure 4-13:** Question 15
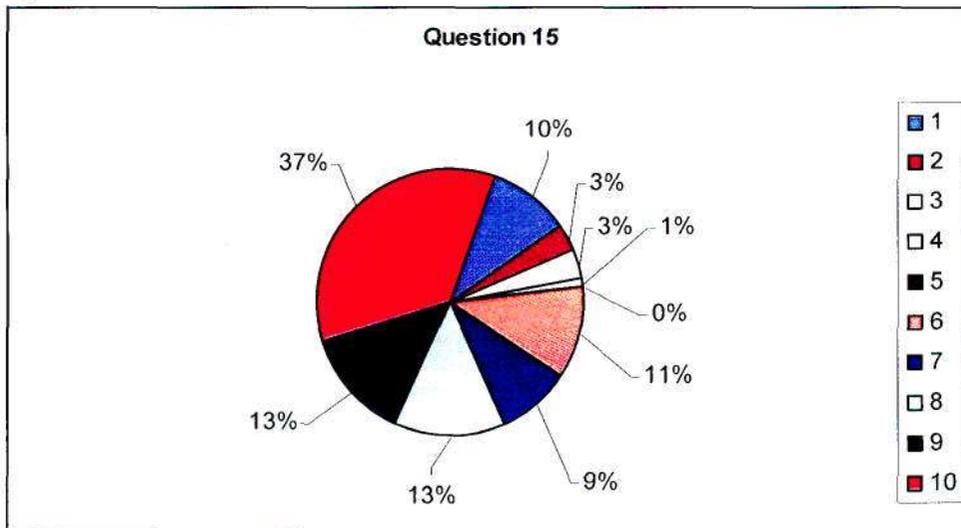


- 69 -

### Question 16: I would not invest in a pension fund if it were not compulsory at my place of work

In some businesses, where the employer has a pension fund scheme, participation in the scheme is compulsory for all staff. The pension payment normally consists of fixed portions. Therefore, the basis of the objective to invest in a pension fund is not always of choice.

The following table (where option 1 indicates that the respondent strongly agreed that the objective for pension is based on work place compulsion and option 10 indicates the fact that the respondent strongly disagrees because his/or her objective is based on self choice) summarises the responses of the participants to the survey:

**Table 4-16**: Question 16

| Coding | Number of Respondents | Percentage (%) |
|---|---|---|
| 1 | 5 | 6 |
| 2 | 2 | 2 |
| 3 | 4 | 4 |
| 4 | 3 | 3 |
| 5 | 0 | 0 |
| 6 | 8 | 9 |
| 7 | 2 | 2 |
| 8 | 11 | 12 |
| 9 | 18 | 20 |
| 10 | 37 | 42 |
| Total | 90 | 100 |

**Figure 4-14**: Question 16
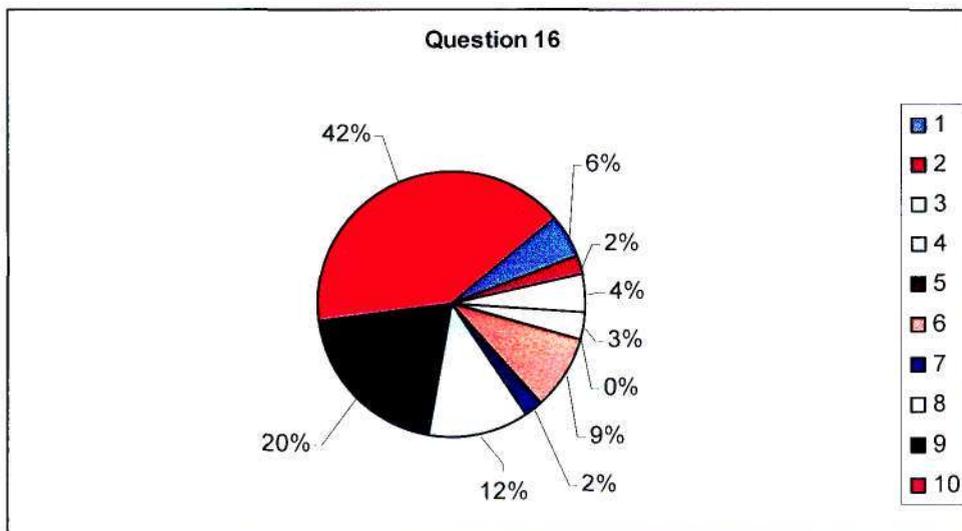
### Question 17: How likely are you to invest in the property market?

This question is part of the series of questions aimed at establishing which type of investment MBA dissertation students prefer. The likelihood of the participants investing in property is summarised in the table below, where point 1 indicates that the respondent is very likely to point ten that indicates that that respondent is not at all likely to invest in property:

**Figure 4-17:** Question 17

| Coding | Number of Respondents | Percentage (%) |
|---|---|---|
| 1 | 39 | 43 |
| 2 | 18 | 20 |
| 3 | 9 | 10 |
| 4 | 5 | 6 |
| 5 | 2 | 2 |
| 6 | 8 | 9 |
| 7 | 0 | 0 |
| 8 | 5 | 6 |
| 9 | 4 | 4 |
| 10 | 0 | 0 |
| Total | 90 | 100 |

**Figure 4-15:** Question 17
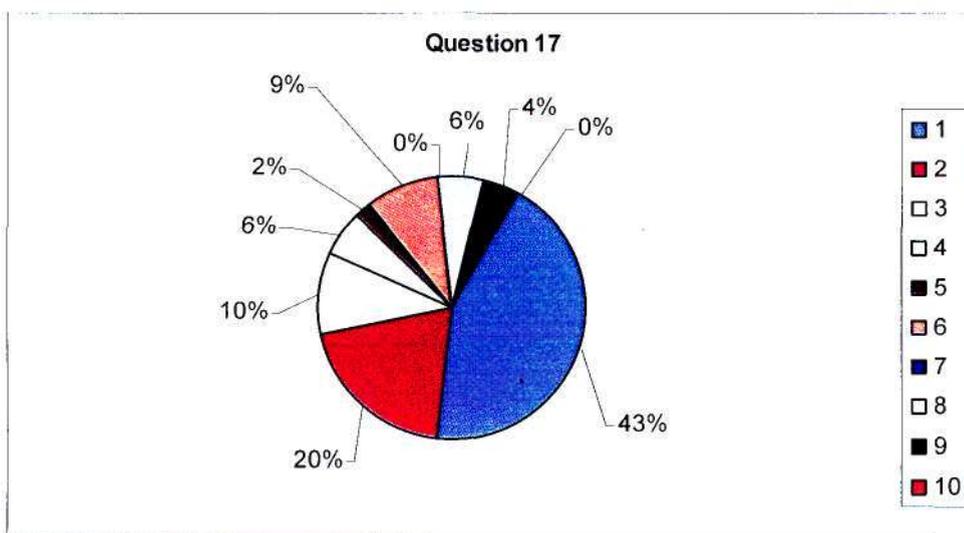
### *Question 18: How likely are you to invest in the stock exchange?*

This question is part of the series of questions aimed at establishing which type of investment MBA dissertation students prefer. The likelihood of the participants investing on the stock exchange is summarised in the table below, where point 1 indicates that the respondent is very likely to point ten that indicates that that respondent is not at all likely to invest on the stock exchange:

**Figure 4-18:** Question 18

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 20 | 21 |
| 2 | 8 | 9 |
| 3 | 14 | 16 |
| 4 | 8 | 9 |
| 5 | 6 | 7 |
| 6 | 12 | 13 |
| 7 | 3 | 3 |
| 8 | 8 | 9 |
| 9 | 5 | 6 |
| 10 | 6 | 7 |
| Total | 90 | 100 |

**Figure 4-16:** Question 18
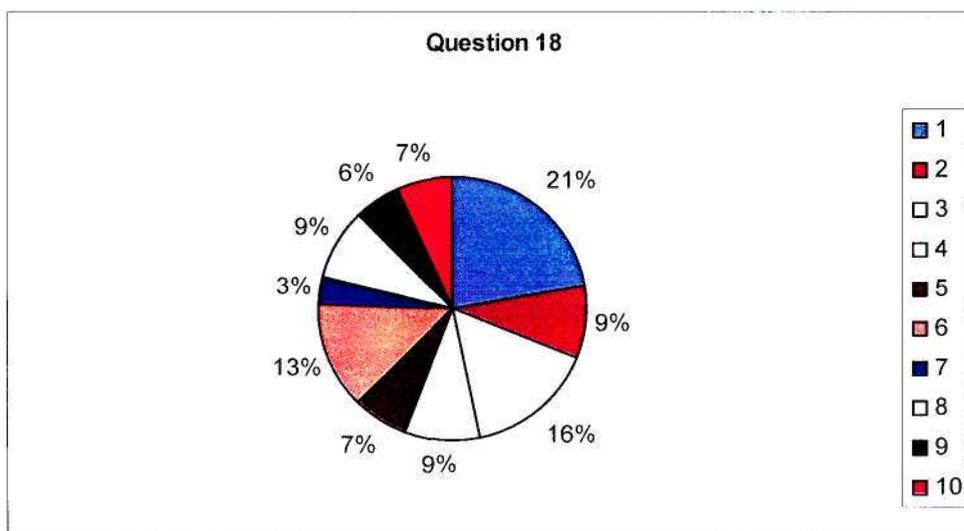
### *Question 19: I am likely to invest in retirement annuities*

This question is part of the series of questions aimed at establishing which type of investment MBA dissertation students prefer. The likelihood of the participants investing in retirement annuities is summarised in the table below, where point 1 indicates that the respondent is very likely to point ten that indicates that that respondent is not at all likely to invest in retirement annuities:

**Figure 4-19:** Question 19

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 10 | 11 |
| 2 | 12 | 13 |
| 3 | 11 | 12 |
| 4 | 6 | 7 |
| 5 | 13 | 15 |
| 6 | 3 | 3 |
| 7 | 12 | 13 |
| 8 | 10 | 11 |
| 9 | 5 | 6 |
| 10 | 8 | 9 |
| Total | 90 | 100 |

**Figure 4-17:** Question 19
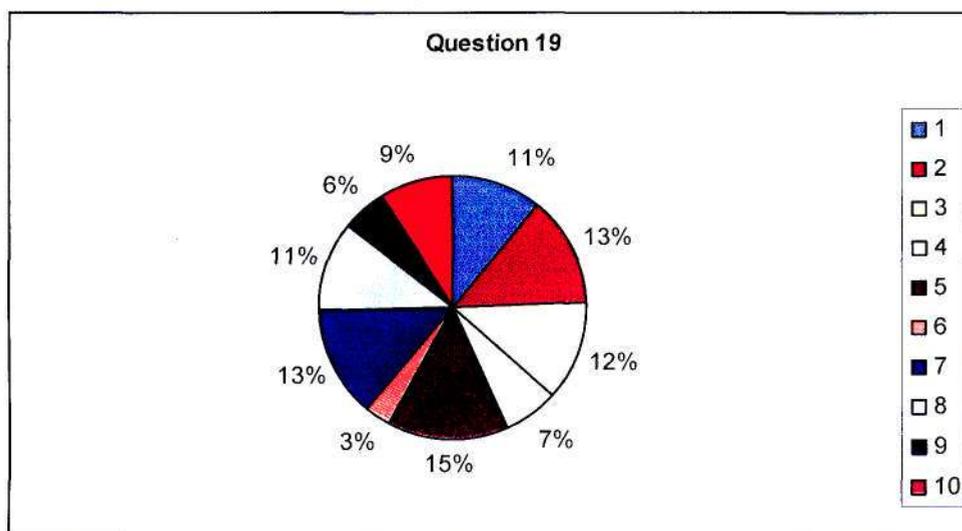
### Question 20: I am likely to invest in unit trusts

This question is part of the series of questions aimed at establishing which type of investment MBA dissertation students prefer. The likelihood of the participants investing in unit trusts is summarised in the table below, where point 1 indicates that the respondent is very likely to point ten that indicates that that respondent is very unlikely to invest in unit trusts:

**Figure 4-20:** Question 20

| Coding | Number of Respondents | Percentage (%) |
|---|---|---|
| 1 | 11 | 12 |
| 2 | 3 | 3 |
| 3 | 11 | 12 |
| 4 | 9 | 10 |
| 5 | 16 | 18 |
| 6 | 4 | 4 |
| 7 | 16 | 18 |
| 8 | 9 | 10 |
| 9 | 5 | 6 |
| 10 | 6 | 7 |
| Total | 90 | 100 |

**Figure 4-18:** Question 20
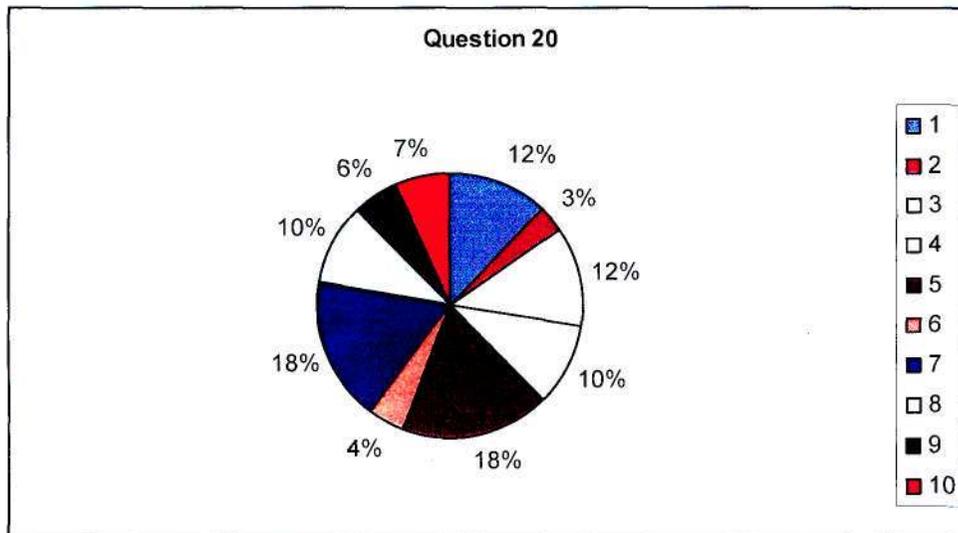
### Question 21: As you get older, are you going to spend more or less on your investment?

This question was to understand whether an objective of the respondent is to invest more or less on his or her investment as he or she grows older. The respondents' objective for the amount that they intend to spend on investment as they get older is summarised in the table below, where point 1 indicates that the respondent will definitely spend more, to point 10 that indicates that that respondent will definitely spend less on his or her investments as he or she gets older:

**Table 4-21:** Question 21

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 18 | 20 |
| 2 | 10 | 11 |
| 3 | 12 | 13 |
| 4 | 14 | 16 |
| 5 | 3 | 3 |
| 6 | 11 | 12 |
| 7 | 8 | 9 |
| 8 | 6 | 7 |
| 9 | 2 | 2 |
| 10 | 6 | 7 |
| Total | 90 | 100 |

**Figure 4-19:** Question 21
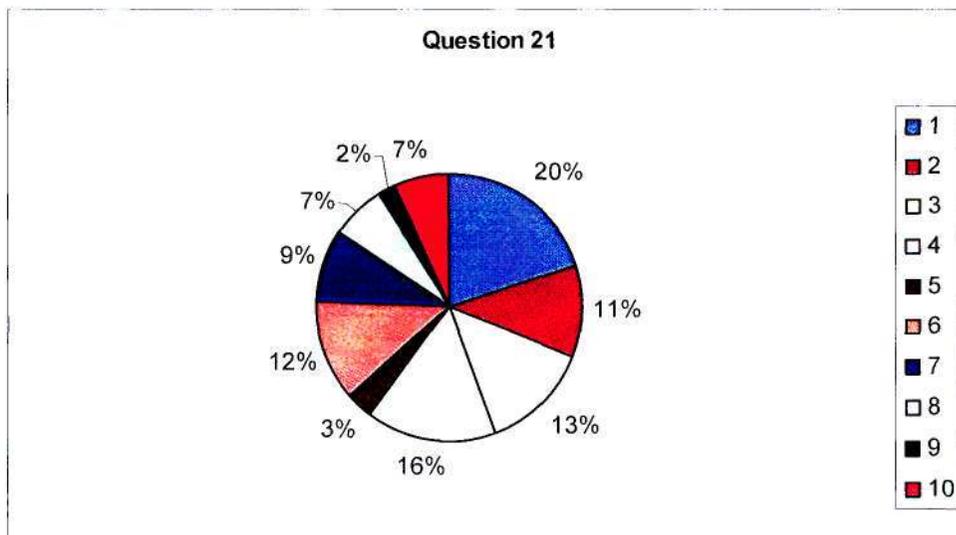
### Question 22: If I had more children or dependants
### my propensity to invest will increase

This question was raised to understand whether the amount of investments of the respondents' is dependent on the number of dependents (children, sick elderly, disabled, etc) of the respondents. The respondents' attitude towards an increase in the number of investments is summarised in the table below, where point 1 indicates that the respondent will very likely increase the number of investment if he or she had more children, to point 10 that indicates that it is very unlikely that the respondent will increase the number of investment if he or she had more dependents (dependents are not a constraint).

**Table 4-22**: Question 22

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 11 | 12 |
| 2 | 16 | 18 |
| 3 | 11 | 12 |
| 4 | 3 | 3 |
| 5 | 15 | 17 |
| 6 | 6 | 7 |
| 7 | 11 | 12 |
| 8 | 8 | 9 |
| 9 | 3 | 3 |
| 10 | 6 | 7 |
| Total | 90 | 100 |

**Figure 4-20**: Question 22
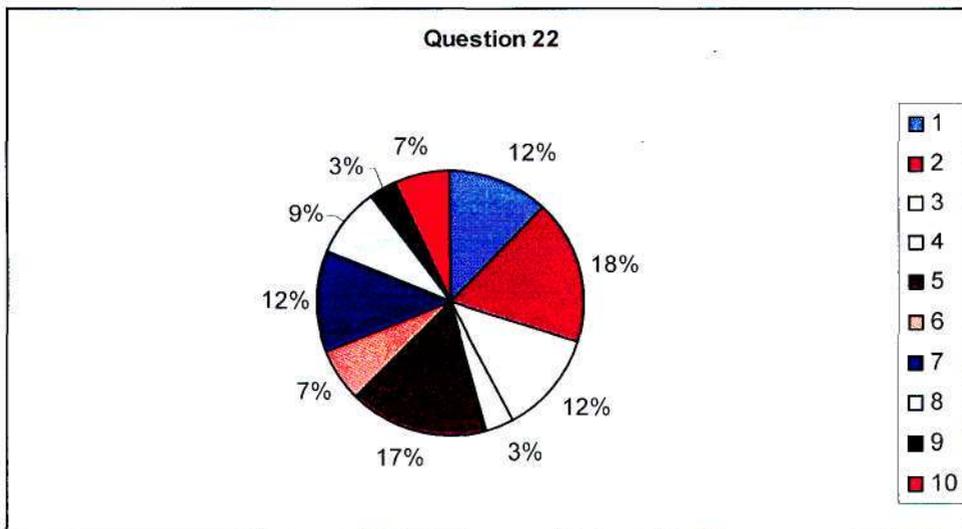
### Question 23: To what degree are you scared to invest?

This direct question was posed to understand the respondents' attitude toward risk. The respondents' attitude towards risk tolerance and risk aversity is summarised in the table below, where point 1 indicates that the respondent is very scared to invest (risk averse), to point 10 that indicates that that respondent is not very scared to invest (not risk averse):

**Table 4-23:** Question 23

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 10 | 11 |
| 2 | 10 | 11 |
| 3 | 9 | 10 |
| 4 | 11 | 12 |
| 5 | 24 | 27 |
| 6 | 7 | 8 |
| 7 | 6 | 7 |
| 8 | 11 | 12 |
| 9 | 1 | 1 |
| 10 | 1 | 1 |
| Total | 90 | 100 |

**Figure 4-21:** Question 23
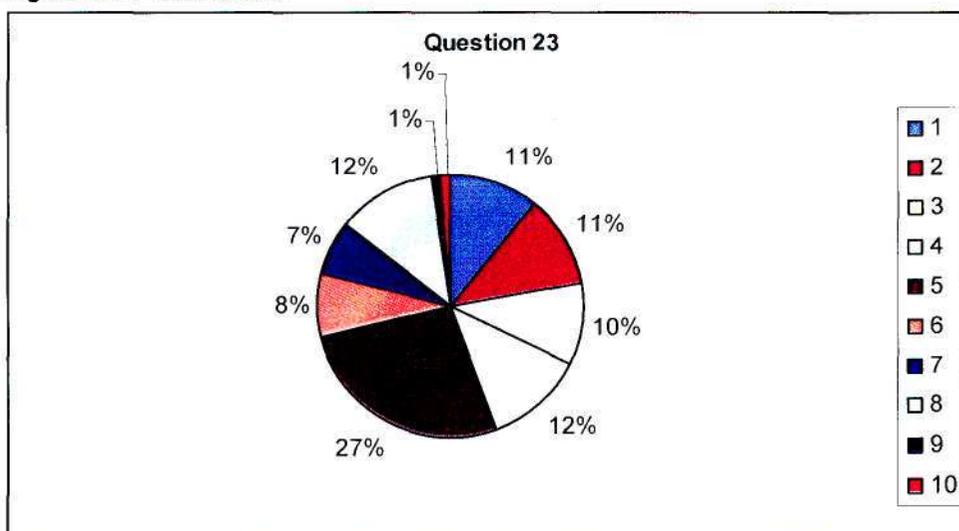
### *Question 24: If my income increased, I would be less cautious in my investment strategy*

The respondents' attitude towards the amount of caution (or risk) based on income is summarised in the table below, where point 1 indicates that the respondent strongly agrees that he or she will be less cautious if his or her income increased (less risk averse), to point 10 that indicates that the respondent strongly disagrees that he or she will not be less cautious if his or her income increased (more risk averse).

**Table 4-24**: Question 24

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 11 | 12 |
| 2 | 8 | 9 |
| 3 | 7 | 8 |
| 4 | 5 | 6 |
| 5 | 8 | 9 |
| 6 | 6 | 7 |
| 7 | 5 | 6 |
| 8 | 17 | 18 |
| 9 | 7 | 8 |
| 10 | 16 | 17 |
| Total | 90 | 100 |

**Figure 4-22**: Question 24



- 78 -
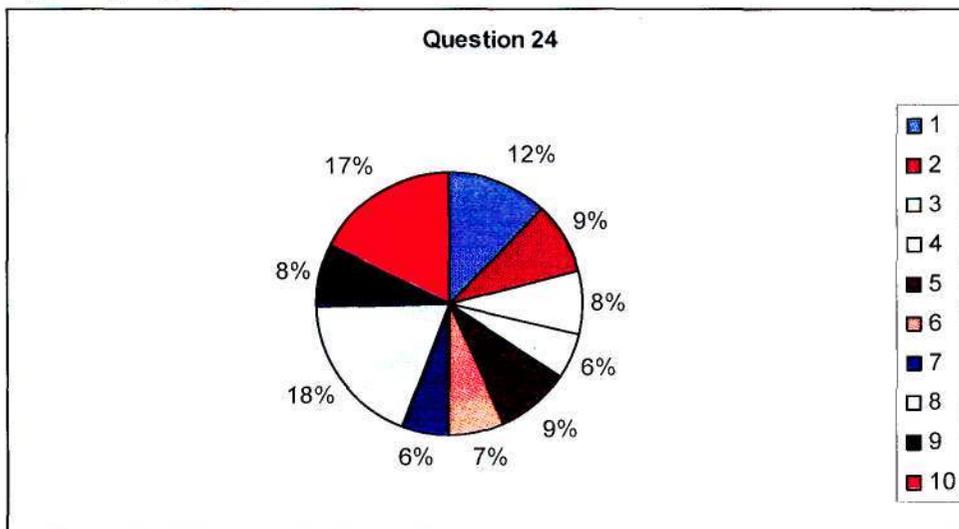
### Question 25: If I got a new job, I would increase the number of my investments

The respondents' attitude towards an increase in the number of investments is summarised in the table below, where point 1 indicates that the respondent will very likely increase the number of investment if he or she got a new job, to point 10 that indicates that it is very unlikely that the respondent will increase the number of investment if he or she got a new job (job is not a constraint).

**Table 4-25**: Question 25

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 20 | 22 |
| 2 | 8 | 9 |
| 3 | 11 | 12 |
| 4 | 7 | 8 |
| 5 | 20 | 22 |
| 6 | 7 | 8 |
| 7 | 5 | 6 |
| 8 | 6 | 7 |
| 9 | 2 | 2 |
| 10 | 4 | 4 |
| Total | 90 | 100 |

This data as illustrated graphically in Figure 4-23, below, which indicates that more respondents will increase the number of their investment if they got a new job.

**Figure 4-23**: Question 25



- 79 -
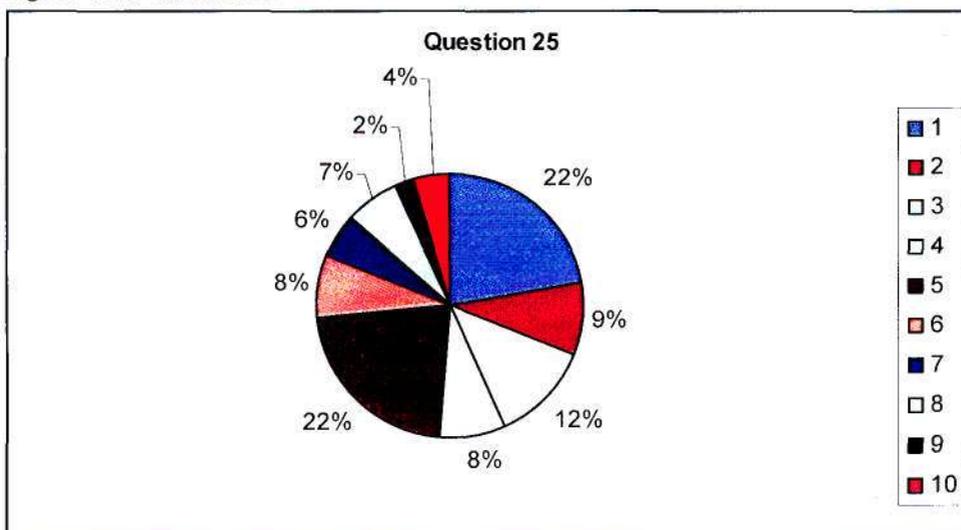
### Question 26: If my income doubled, I would increase the amount of money I invest

This question is to understand whether income is, and to what extent the amount of income is, a constraint to the amount of money invested. The respondents' attitude towards the amount of the money they would invest if their income increased is summarised in the table and figure below, where point 1 indicates that the respondent will very likely increase the amount of money of investment based on his or her salary being doubled, to point 10 that indicates that it is very unlikely that the respondent will increase the amount of money spend on investments if his or her salary increased:

**Table 4-26**: Question 26

| Coding | Number of Respondents | Percentage (%) |
|--------|----------------------|----------------|
| 1 | 38 | 43 |
| 2 | 20 | 23 |
| 3 | 8 | 9 |
| 4 | 4 | 4 |
| 5 | 3 | 3 |
| 6 | 0 | 0 |
| 7 | 3 | 3 |
| 8 | 3 | 3 |
| 9 | 3 | 3 |
| 10 | 8 | 9 |
| Total | 90 | 100 |

**Figure 4-24:** Question 26
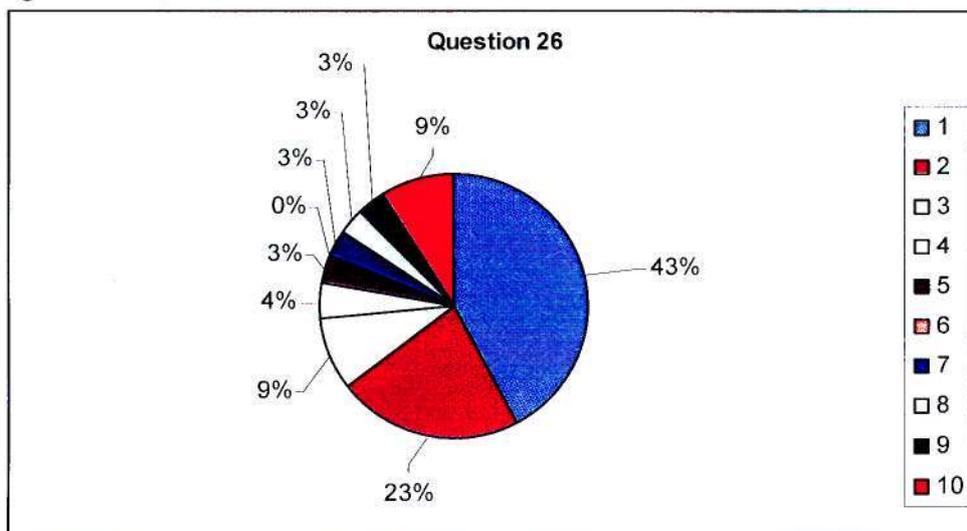
## 4.3. Comparison statistics of respondent data

### *Comparison Statistics Gender: Demographics*

**Respondent Age Group**: Question 2* and **Respondent Gender**: Question 1*
**Table 4-27**: Question 1 and 2

% of Total

| Q2 : Respondent Age Group | Q1 Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| 21 - 25 years | 0.0 | 0.0 | 0.0 |
| 26 - 30 years | 6.7 | 4.4 | 11.1 |
| 31 - 35 years | 20.0 | 24.4 | 44.4 |
| 36 - 40 years | 13.3 | 16.7 | 30.0 |
| 41 - 45 years | 2.2 | 7.8 | 10.0 |
| 46 - 50 years | 2.2 | 1.1 | 3.3 |
| 51 - 55 years | 0.0 | 1.1 | 1.1 |
| Total | 44.4 | 55.6 | 100 |

The above table reveals comparative descriptive results of respondent age groups as per gender.

**UKZN MBA dissertation students**: Question 3* and **Respondent Gender**: Question 1*
**Table 4-28**: Question 1 and 3

% of total

| Q3 Are you an UKZN MBA dissertation student | Q1: Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total (%) |
| Yes | 44.4 | 55.6 | 100.0 |
| No | 0.0 | 0.0 | 0.0 |
| Total | 44.4 | 55.6 | 100.0 |

The above table reveals comparative descriptive results of respondent qualifying criteria UKZN MBA dissertation students) as per gender.

**Respondent Population group** – Question 4* and **Respondent Gender** – Question 1*
Table 4-29: Question 1 and 4

% of total

| Q4: Respondent population group | Q1: Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| Black | 13.3 | 20.0 | 33.3 |
| Coloured | 1.1 | 1.1 | 2.2 |
| Indian | 22.2 | 22.2 | 44.4 |
| White | 7.7 | 12.2 | 19.9 |
| Total | 44.4 | 55.6 | 100 |

The table below presents comparative descriptive results of respondent population groups as per gender.

**Respondent Employment status** – Question 5* and **Respondent Gender:** Question 18*
Table 4-30: Question 1 and 5

% of Total

| Q5: Respondent Employment status | Q1: Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| Employed by the government | 8.0 | 14.0 | 23.0 |
| Employed by a corporate | 26.7 | 32.2 | 58.9 |
| Employed in a family business | 2.2 | 1.1 | 3.3 |
| Consultant | 3.4 | 3.3 | 6.7 |
| Self employed | 3.3 | 3.4 | 6.7 |
| Employed on a part time basis | 0.0 | 1.1 | 1.1 |
| Total | 44.4 | 55.6 | 100.0 |

The above table reveals comparative descriptive results of respondent household net monthly income as per gender.

**Household net monthly income:** Question 6 and **Respondent Gender:** Question 1
**Table 4-31:** Question 1 and 6

% of Total

| Q6: The total monthly net income to my household is approximately | Q1 : Respondent Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| R 0 - R 10 000 | 1.1 | 0.0 | 1 |
| R 11 000 – R 15 000 | 2.2 | 1.1 | 3 |
| R 16 000 - R 20 000 | 6.6 | 5.5 | 12 |
| R 21 000 - R 30 000 | 15.5 | 13.3 | 29 |
| R 31 000 - R 40 000 | 17.7 | 32.2 | 51 |
| Above R 100 000 | 1.1 | 3.3 | 4 |
| Total | 44.4 | 55.6 | 100.0 |

The above table reveals comparative descriptive results of respondent income group as per gender.

**Respondent household adult composition:** Question 8.1* and
**Respondent Gender:** Question 1*
**Table 4-32:** Question 1 and 8.1

% of Total

| Q8.1 : Your household including you consists of  Number of adults | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| 1 | 4.4 | 4.4 | 8.9 |
| 2 | 23.3 | 36.7 | 60.0 |
| 3 | 13.3 | 6.7 | 20.0 |
| 4 | 2.2 | 4.4 | 6.7 |
| 5 | 1.1 | 3.3 | 4.4 |
| Total | 44.4 | 55.6 | 100.0 |

The above table reveals comparative descriptive results of respondent household adult composition as per gender.

**Respondent household dependents:** Question 8.2 and **Respondent Gender:** Question 1
**Table 4-33:** Question 1 and 8.2

% of Total

| Q8.2 : Your household including you consists of Number of dependents | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| 0 | 21.1 | 15.6 | 36.7 |
| 1 | 10.0 | 11.1 | 21.1 |
| 2 | 6.7 | 15.6 | 22.2 |
| 3 | 5.6 | 5.6 | 11.1 |
| 4 | 0.0 | 2.2 | 2.2 |
| 5 | 0.0 | 4.4 | 4.4 |
| 6 | 0.0 | 1.1 | 1.1 |
| 7 | 1.1 | 0.0 | 1.1 |
| Total | 44.4 | 55.6 | 100.0 |

The above table reveals comparative descriptive results of respondent household dependent composition as per gender.

## Comparison Statistics: Gender and Investment Strategies

## Respondent Preferences:

**Respondent Gender:** *Question 1\* and:*

*Question 10\* I would rather take the risk of investing on my own than trust an investment broker*

**Cross tabulation**

**Table 4-34:** Q1 and Q10
Count

| QUESTION: 10: I would rather take the risk of investing on my own than trust an investment broker | QUESTION: 1 : Respondent Gender | | Total |
|---|---|---|---|
| | Female (1) | Male (2) | |
| 1 | 2 | 8 | 10 |
| 2 | 2 | 0 | 2 |
| 3 | 2 | 4 | 6 |
| 4 | 2 | 7 | 9 |
| 5 | 0 | 0 | 0 |
| 6 | 7 | 6 | 13 |
| 7 | 4 | 4 | 8 |
| 8 | 12 | 9 | 21 |
| 9 | 5 | 7 | 12 |
| 10 | 4 | 5 | 9 |
| Total | 40 | 50 | 90 |

*Question 11\*: It is likely that I would first invest in a government bond.*

**Cross tabulation**
**Table 4-35:** Q1 and Q11
Count

| QUESTION: 11: It is likely that I would first invest in a government bond. | QUESTION: 1 : Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| 1 | 10 | 12 | 22 |
| 2 | 5 | 8 | 13 |
| 3 | 1 | 8 | 9 |
| 4 | 3 | 3 | 6 |
| 5 | 0 | 0 | 0 |
| 6 | 7 | 10 | 17 |
| 7 | 4 | 0 | 4 |
| 8 | 3 | 5 | 8 |
| 9 | 3 | 1 | 4 |
| 10 | 4 | 3 | 7 |
| Total | 40 | 50 | 90 |

*Question 12: I would rather invest in the shares of a private business than a public company*

**Cross tabulation**
**Table 4-36:** Q1 and Q12
Count

| QUESTION: 12: I would rather invest in the shares of a private business than a public company | QUESTION: 1 : Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| 1 | 2 | 7 | 9 |
| 2 | 1 | 2 | 3 |
| 3 | 6 | 2 | 8 |
| 4 | 1 | 5 | 6 |
| 5 | 0 | 6 | 6 |
| 6 | 12 | 0 | 12 |
| 7 | 4 | 10 | 14 |
| 8 | 8 | 4 | 12 |
| 9 | 3 | 7 | 10 |
| 10 | 3 | 7 | 10 |
| Total | 40 | 50 | 90 |

The above also measures risk aversity

*Question 13: I would likely spend money on a guaranteed investment return than any blue chip share*

**Cross tabulation**
**Table 4-37:** Q1 and Q13
Count

| QUESTION: 13: I would likely spend money on a guaranteed investment return than any blue chip share | QUESTION: 1 : Respondent Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| 1 | 7 | 8 | 15 |
| 2 | 5 | 6 | 11 |
| 3 | 2 | 3 | 5 |
| 4 | 1 | 7 | 8 |
| 5 | 0 | 0 | 0 |
| 6 | 8 | 11 | 19 |
| 7 | 4 | 8 | 12 |
| 8 | 7 | 9 | 16 |
| 9 | 3 | 1 | 4 |
| 10 | 3 | 3 | 6 |
| Total | 40 | 50 | 90 |

The above also measures risk aversity

*Question 17: How likely are you to invest in the property market?*

**Cross tabulation**
**Table 4-38:** Q1 and Q17
Count

| QUESTION: 17: How likely are you to invest in the property market | QUESTION: 1 : Respondent Gender | | Total |
| --- | --- | --- | --- |
| | Female | Male | |
| 1 | 1 | 0 | 1 |
| 2 | 1 | 2 | 2 |
| 3 | 1 | 4 | 5 |
| 4 | 0 | 0 | 0 |
| 5 | 1 | 7 | 8 |
| 6 | 2 | 0 | 2 |
| 7 | 3 | 2 | 5 |
| 8 | 5 | 4 | 9 |
| 9 | 7 | 11 | 18 |
| 10 | 20 | 19 | 39 |
| Total | 40 | 50 | 90 |

*Question 18: How likely are you to invest in the stock exchange?*

**Cross tabulation**
**Table 4-39:** Q1 and Q18
**Count**

| QUESTION: 18: How likely are you to invest in the stock exchange? | QUESTION: 1 : Respondent Gender | | Total |
| --- | --- | --- | --- |
| | Female | Male | |
| 1 | 1 | 5 | 6 |
| 2 | 3 | 2 | 5 |
| 3 | 3 | 5 | 8 |
| 4 | 2 | 1 | 3 |
| 5 | 5 | 7 | 12 |
| 6 | 3 | 3 | 6 |
| 7 | 3 | 5 | 8 |
| 8 | 8 | 6 | 14 |
| 9 | 2 | 6 | 8 |
| 10 | 10 | 10 | 20 |
| Total | 40 | 50 | 90 |

*Question 19: I am likely to invest in retirement annuities*

**Cross tabulation**
**Table 4-40:** Q1 and Q19
Count

| QUESTION: 19: I am likely to invest in retirement annuities | QUESTION: 1 : Respondent Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| 1 | 1 | 9 | 10 |
| 2 | 7 | 5 | 12 |
| 3 | 4 | 7 | 11 |
| 4 | 3 | 3 | 6 |
| 5 | 9 | 4 | 13 |
| 6 | 3 | 0 | 3 |
| 7 | 5 | 7 | 12 |
| 8 | 4 | 6 | 10 |
| 9 | 2 | 3 | 5 |
| 10 | 2 | 6 | 15 |
| Total | 40 | 50 | 90 |

*Question 20: I am likely to invest in unit trusts*

**Cross tabulation**
**Table 4-41:** Q1 and Q20
Count

| QUESTION: 20: I am likely to invest in unit trusts | QUESTION: 1 : Respondent Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| 1 | 6 | 5 | 11 |
| 2 | 1 | 2 | 3 |
| 3 | 2 | 9 | 11 |
| 4 | 4 | 5 | 9 |
| 5 | 5 | 11 | 16 |
| 6 | 2 | 2 | 14 |
| 7 | 7 | 9 | 16 |
| 8 | 5 | 4 | 9 |
| 9 | 4 | 1 | 5 |
| 10 | 4 | 2 | 6 |
| Total | 40 | 50 | 90 |

## Respondent Objectives:

## Respondent Gender: *Question 1* *and:*

*Q14: I have an insurance policy only because it is required in order for my home loan to be granted*

**Cross Tabulation:**
**Table 4-42:** Q1 and Q14
Count

| Q14: I have an insurance policy only because it is required in order for my home loan to be granted | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 9 | 10 | 19 |
| 2 | 3 | 4 | 7 |
| 3 | 1 | 3 | 4 |
| 4 | 0 | 4 | 4 |
| 5 | 0 | 0 | 0 |
| 6 | 4 | 4 | 8 |
| 7 | 2 | 4 | 6 |
| 8 | 7 | 4 | 11 |
| 9 | 3 | 4 | 7 |
| 10 | 11 | 13 | 24 |
| Total | | | |

*Q15: I have an insurance policy only because of my employer's employment policy*

**Cross Tabulation:**
**Table 4-43:** Q1 and Q15
Count

| Q15: I have an insurance policy only because of my employer's employment policy | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 5 | 4 | 9 |
| 2 | 3 | 0 | 3 |
| 3 | 1 | 2 | 3 |
| 4 | 0 | 1 | 1 |
| 5 | 0 | 0 | 0 |
| 6 | 6 | 4 | 10 |
| 7 | 1 | 7 | 8 |
| 8 | 5 | 7 | 12 |
| 9 | 6 | 6 | 12 |
| 10 | 13 | 19 | 32 |
| Total | 40 | 50 | 90 |

*Q16: I would not invest in a pension fund if it were not compulsory at my place of work*

**Cross Tabulation:**
**Table 4-44:** Q1 and Q16
Count

| Q16: I would not invest in a pension fund if it were not compulsory at my place of work | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 4 | 1 | 5 |
| 2 | 1 | 1 | 2 |
| 3 | 0 | 4 | 4 |
| 4 | 2 | 1 | 3 |
| 5 | 0 | 0 | 0 |
| 6 | 5 | 3 | 8 |
| 7 | 1 | 1 | 2 |
| 8 | 7 | 4 | 11 |
| 9 | 8 | 10 | 18 |
| 10 | 12 | 25 | 37 |
| Total | 40 | 50 | 90 |

*Q21: As you get older are you going to spend more or less on your investments*

**Cross Tabulation:**
**Table 4-45:** Q1 and Q21
Count

| Q21: As you get older are you going to spend more or less on your investments | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 1 | 5 | 6 |
| 2 | 1 | 1 | 2 |
| 3 | 2 | 4 | 6 |
| 4 | 5 | 3 | 8 |
| 5 | 7 | 4 | 11 |
| 6 | 2 | 1 | 3 |
| 7 | 4 | 10 | 14 |
| 8 | 4 | 8 | 12 |
| 9 | 4 | 6 | 10 |
| 10 | 10 | 8 | 18 |
| Total | 40 | 50 | 90 |

## *Respondent Expectations:*

## Respondent Gender: Question 1*

*Q12\*: I would rather invest in the shares of a private business than a public company*

**Cross Tabulation:**
**Table 4-46:** Q1 and Q12

Count

| Q12: I would rather invest in the shares of a private business than a public company | gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 1 | 2 | 7 |
| 2 | 2 | 1 | 2 |
| 3 | 3 | 6 | 2 |
| 4 | 4 | 1 | 5 |
| 5 | 5 | 0 | 6 |
| 6 | 6 | 12 | 0 |
| 7 | 7 | 4 | 10 |
| 8 | 8 | 8 | 4 |
| 9 | 9 | 3 | 7 |
| 10 | 10 | 3 | 7 |
| Total | | 40 | 50 | 90 |

*\*Q13: I would likely spend money on a guaranteed investment return than any blue chip share*

**Cross Tabulation:**
**Table 4-47:** Q1 and Q13
Count

| Q13: I would likely spend money on a guaranteed investment return than any blue chip share | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | Female | male | |
| 1 | 1 | 7 | 8 |
| 2 | 2 | 5 | 6 |
| 3 | 3 | 2 | 3 |
| 4 | 4 | 1 | 7 |
| 5 | 5 | 0 | 0 |
| 6 | 6 | 8 | 11 |
| 7 | 7 | 4 | 8 |
| 8 | 8 | 7 | 9 |
| 9 | 9 | 3 | 1 |
| 10 | 10 | 3 | 3 |
| Total | | 40 | 50 | 90 |

## *Respondent Constraints:*

## Respondent Gender: *Question 1* and*

*Q22: If I had more children or dependants my propensity to invest will increase*
**Cross Tabulation:**
**Table 4-48:** Q1 and Q22
Count

| Q22: If I had more children or dependants my propensity to invest will increase | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | Female | male | |
| 1 | 1 | 4 | 7 |
| 2 | 2 | 7 | 9 |
| 3 | 3 | 4 | 7 |
| 4 | 4 | 2 | 1 |
| 5 | 5 | 6 | 11 |
| 6 | 6 | 1 | 7 |
| 7 | 7 | 8 | 3 |
| 8 | 8 | 4 | 4 |
| 9 | 9 | 2 | 1 |
| 10 | 10 | 2 | 4 |
| Total | 40 | 50 | 90 |

*Q24: If my income increased I would be less cautious in my investment strategy*

**Cross Tabulation:**
**Table 4-49:** Q1 and Q24
Count

| Q24: If my income increased I would be less cautious in my investment strategy | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 2 | 9 | 11 |
| 2 | 3 | 5 | 8 |
| 3 | 2 | 5 | 7 |
| 4 | 3 | 2 | 5 |
| 5 | 2 | 6 | 8 |
| 6 | 6 | 0 | 6 |
| 7 | 2 | 3 | 5 |
| 8 | 8 | 9 | 17 |
| 9 | 3 | 4 | 7 |
| 10 | 9 | 7 | 16 |
| Total | 40 | 50 | 90 |

*Q25: If I got a new job I would increase the number of my investments

**Cross Tabulation:**
**Table 4-50:** Q1 and Q25
Count

| Q25: If I got a new job I would increase the number of my investments | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 9 | 11 | 20 |
| 2 | 4 | 4 | 8 |
| 3 | 2 | 9 | 11 |
| 4 | 2 | 5 | 7 |
| 5 | 10 | 10 | 20 |
| 6 | 5 | 2 | 7 |
| 7 | 2 | 3 | 5 |
| 8 | 3 | 3 | 6 |
| 9 | 2 | 0 | 2 |
| 10 | 1 | 3 | 4 |
| Total | 40 | 50 | 90 |

*Q26: If my income doubled I would increase the amount of money I invest

**Cross Tabulation:**
**Table 4-51:** Q1 and Q26
Count

| Q26: If my income doubled I would increase the amount of money I invest | Q1: Respondent Gender | | Total |
|---|---|---|---|
| | female | male | |
| 1 | 14 | 24 | 38 |
| 2 | 9 | 11 | 20 |
| 3 | 5 | 3 | 8 |
| 4 | 3 | 1 | 4 |
| 5 | 2 | 1 | 3 |
| 6 | 0 | 0 | 0 |
| 7 | 0 | 3 | 3 |
| 8 | 1 | 2 | 3 |
| 9 | 2 | 1 | 3 |
| 10 | 4 | 4 | 8 |
| Total | 40 | 50 | 90 |

## *Respondent Risk Aversity*:

## Respondent Gender: *Question 1 \* and*

*\*Q9: If I made my investment decisions on my own I would take greater risks*

**Cross Tabulation:**
**Table 4-52**: Q1 and Q9
Count

| Q9 : If I made my investment decisions on my own I would take greater risks | Q1: Respondent Gender | | |
|---|---|---|---|
| | female | male | Total |
| 1 | 5 | 1 | 6 |
| 2 | 4 | 1 | 5 |
| 3 | 4 | 4 | 8 |
| 4 | 2 | 6 | 8 |
| 5 | 0 | 0 | 0 |
| 6 | 14 | 15 | 29 |
| 7 | 2 | 9 | 11 |
| 8 | 5 | 9 | 14 |
| 9 | 0 | 1 | 1 |
| 10 | 4 | 4 | 8 |
| Total | 40 | 50 | 90 |

*\*Q23: To what degree are you scared to invest?*

**Cross Tabulation:**
**Table 4-53**: Q1 and Q23
Count

| Q23: To what degree are you scared to invest? | Q1: Respondent Gender | | |
|---|---|---|---|
| | Female | male | Total |
| 1 | 4 | 6 | 10 |
| 2 | 7 | 3 | 20 |
| 3 | 2 | 7 | 9 |
| 4 | 6 | 5 | 11 |
| 5 | 10 | 14 | 14 |
| 6 | 5 | 2 | 7 |
| 7 | 1 | 5 | 6 |
| 8 | 4 | 7 | 11 |
| 9 | 1 | 0 | 1 |
| 10 | 0 | 1 | 1 |
| Total | 40 | 50 | 90 |

*Q10, Q12, Q13 and Q24* also measure risk aversity.

## 4.4. Inferential statistics of the respondent data

Using inferential statistical methods, the responses to the questionnaire are analysed according to the gender and the preferences, objectives, expectations, constraints and risk of the respondents. Swinscow (1997) and Bruce (2001) describe the rules of interpretation for the statistical tests as follows:

**Chi-Square, Mann-Whitney U, Wilcoxon W and Kendall's tau_b:**

**Interpretation Rule:** 1. If p value is less than or equal p$\leq$ 0.10, statistically there is significant difference between study variables.

2. If p value is greater than p>0.10, statistically there is no significant difference between study variables.

Note: p is the probability of getting a value that is more extreme than the one observed (assuming that there is no association between the study variables).

**T-test:**

**Interpretation Rule:** 1. If p value is less than or equal p$\leq$ 0.05, statistically there is significant difference between the study variables.

2. If p value is less than or equal p> 0.05, statistically there is no significant difference between the study variables.

**Correlation Scale: Interpretation Rule:**
1. The Sig. value (p value) P <= 0.10, there is statistically significance correlation.

2. Kendall correlation co efficient (r) values starts from -1 to +1

3. If  -- means negative correlation (one variable increases, the other variable decreases)

4. If  + means positive relationship. (one variable increases, the other variable increase)

5. -- or + indicates direction of relationship between two variables

6. In terms of relationship strength:

r = .10 to .29 or -.10 to -.29   small (moderate) correlation

r = .30 to .49 or -.30 to -.49 medium correlation

r = .50 to 1.0 or -.50 to -1.0 large (strong) correlation.

### 4.4.1. Reliability Statistics – Cronbach Alpha Test

To compare the reliability of the responses on a ten point scale, the Cronbach reliability coefficient was calculated for the responses to Questions 14, 15 and 16 (variables Q14, Q15 and Q16) for each of the scales.

**Table 4-54**: Reliability

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .647 | 3 |

## Interpretation:

Reliability analysis for the questionnaire continuous variables reveal Cronbach's alpha value is 0.647 on the ten point scale (and 0.636 on the five point scale), this is nearer 0.7, and it indicates this research instrument's (questionnaire) study variables have internal consistency and reliability. It can be seen from the above that the reliability coefficient is much the same for the two scales. Therefore the results obtained for the two scales should not differ very much.

### 4.4.2 Kendall's tau_b, Chi-Square, Mann-Whitney U and Wilcoxon W tests

The results of the Chi-Square and Kendall's tau_b tests are presented in ten point measurement scales, below, and the results of the Chi-Square, Kendall's tau_b, Mann-Whitney U and Wilcoxon W tests in a five measurement scales are presented in the tables attached hereto as Annexure 5. The analysis is to see whether there is statistically any significant difference in the attitude of the respondents.

## Preferences:

**Gender – Question 1\* and**
\*Q10: I would rather take the risk of investing on my own than trust an investment broker
\*Q11: It is likely that I would first invest in a government bond
\*Q12: I would rather invest in the shares of a private business than a public company
\*Q13: I would likely spend money on a guaranteed investment return than any blue chip share
\*Q17: How likely are you to invest in the property market?
\*Q18: How likely are you to invest in the stock exchange?
\*Q19: I am likely to invest in retirement annuities
\*Q20: I am likely to invest in unit trusts

**Table 4-55**: Preferences: Q1
**Test Statistics (a)**

|  | Q10 | Q11 | Q12 | Q13 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|
| Mann-Whitney U | 863.500 | 867.500 | 954.500 | 877.000 | 831.500 | 930.500 | 971.000 | 803.000 |
| Wilcoxon W | 2138.500 | 1687.500 | 1774.500 | 2152.000 | 1651.500 | 1750.500 | 2246.000 | 2078.000 |
| Z | -1.121 | -1.091 | -.373 | -1.009 | -1.435 | -.570 | -.237 | -1.614 |
| Asymp. Sig. (2-tailed) | .262 | .275 | .709 | .313 | .151 | .569 | .813 | .107 |

a Grouping Variable: gender

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

## (b) Population Group – Question 4* and

*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q11: It is likely that I would first invest in a government bond
*Q12: I would rather invest in the shares of a private business than a public company
*Q13: I would likely spend money on a guaranteed investment return than any blue chip share
*Q17: How likely are you to invest in the property market?
*Q18: How likely are you to invest in the stock exchange?
*Q20: I am likely to invest in unit trusts

**Table 4-56:** Preferences: Q4
**Test Statistics (a, b)**

|  | Q10 | Q11 | Q12 | Q13 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|
| Chi-Square | 3.884 | .883 | .378 | 1.983 | 1.502 | 1.010 | 2.792 | 2.620 |
| Df | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Asymp. Sig. | .274 | .830 | .945 | .576 | .682 | .799 | .425 | .454 |

a  Kruskal Wallis Test
b  Grouping Variable: Population Group

## (c) Job – Question 5* and

*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q11: It is likely that I would first invest in a government bond
*Q12: I would rather invest in the shares of a private business than a public company
*Q13: I would likely spend money on a guaranteed investment return than any blue chip share
*Q17: How likely are you to invest in the property market?
*Q18: How likely are you to invest in the stock exchange?
*Q19: I am likely to invest in retirement annuities
*Q20: I am likely to invest in unit trusts

**Table 4-57:** Preferences: Q5
**Test Statistics(a,b)**

|  | Q10 | Q11 | Q12 | Q13 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|
| Chi-Square | 6.759 | 4.077 | 1.291 | 4.303 | 1.888 | .047 | 2.722 | 4.437 |
| Df | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .034 | .130 | .524 | .116 | .389 | .977 | .256 | .109 |

a  Kruskal Wallis Test
b  Grouping Variable: job

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables. In question 10, the respondents who are employed by corporate companies prefer to use brokers more than those employed by government.

## (d) Source of income – Question 7* and

*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q11: It is likely that I would first invest in a government bond
*Q12: I would rather invest in the shares of a private business than a public company
*Q13: I would likely spend money on a guaranteed investment return than any blue chip share

*Q17: How likely are you to invest in the property market?
*Q18: How likely are you to invest in the stock exchange?
*Q19: I am likely to invest in retirement annuities
*Q20: I am likely to invest in unit trusts

**Table 4-58:** Preferences: Q7
**Test Statistics(a,b)**

|  | Q10 | Q11 | Q12 | Q13 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|
| Chi-Square | 2.122 | .996 | 1.668 | .958 | 2.875 | .904 | .638 | .762 |
| Df | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .346 | .608 | .434 | .619 | .238 | .636 | .727 | .683 |

a Kruskal Wallis Test
b Grouping Variable: incsourc

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(e) **Household size** – Question 8* and
*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q11: It is likely that I would first invest in a government bond
*Q12: I would rather invest in the shares of a private business than a public company
*Q13: I would likely spend money on a guaranteed investment return than any blue chip share
*Q17: How likely are you to invest in the property market
*Q18: How likely are you to invest in the stock exchange?
*Q19: I am likely to invest in retirement annuities
*Q20: I am likely to invest in unit trusts

**Table 4-59:** Preferences: Q8 (a)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | .085 |
|---|---|---|---|---|
|  |  | Sig. (2-tailed) | . | .303 |
|  |  | N | 90 | 90 |
|  | q10 | Correlation Coefficient | .085 | 1.000 |
|  |  | Sig. (2-tailed) | .303 | . |
|  |  | N | 90 | 90 |

**Table 4-60:** Preferences: Q8 (b)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | -.079 |
|---|---|---|---|---|
|  |  | Sig. (2-tailed) | . | .342 |
|  |  | N | 90 | 90 |
|  | q11 | Correlation Coefficient | -.079 | 1.000 |
|  |  | Sig. (2-tailed) | .342 | . |
|  |  | N | 90 | 90 |

**Table 4-61:** Preferences: Q8 (c)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | -.184(*) |
|---|---|---|---|---|
| | | Sig. (2-tailed) | . | .025 |
| | | N | 90 | 90 |
| | q12 | Correlation Coefficient | -.184(*) | 1.000 |
| | | Sig. (2-tailed) | .025 | . |
| | | N | 90 | 90 |

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

**Table 4-62:** Preferences: Q8 (d)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | .045 |
|---|---|---|---|---|
| | | Sig. (2-tailed) | . | .587 |
| | | N | 90 | 90 |
| | q13 | Correlation Coefficient | .045 | 1.000 |
| | | Sig. (2-tailed) | .587 | . |
| | | N | 90 | 90 |

**Table 4-63:** Preferences: Q8 (e)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | .071 |
|---|---|---|---|---|
| | | Sig. (2-tailed) | . | .403 |
| | | N | 90 | 90 |
| | q17 | Correlation Coefficient | .071 | 1.000 |
| | | Sig. (2-tailed) | .403 | . |
| | | N | 90 | 90 |

**Table 4-64:** Preferences: Q8 (f)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | -.042 |
|---|---|---|---|---|
| | | Sig. (2-tailed) | . | .610 |
| | | N | 90 | 90 |
| | q18 | Correlation Coefficient | -.042 | 1.000 |
| | | Sig. (2-tailed) | .610 | . |
| | | N | 90 | 90 |

**Table 4-65:** Preferences: Q8 (g)
**Correlations**

| Kendall's tau_b | size | Correlation Coefficient | 1.000 | .077 |
|---|---|---|---|---|
| | | Sig. (2-tailed) | . | .345 |
| | | N | 90 | 90 |
| | q19 | Correlation Coefficient | .077 | 1.000 |
| | | Sig. (2-tailed) | .345 | . |
| | | N | 90 | 90 |

**Table 4-66:** Preferences: Q8 (h)
**Correlations**

| Kendall's tau_b | | | | |
|---|---|---|---|---|
| | size | Correlation Coefficient | 1.000 | -.046 |
| | | Sig. (2-tailed) | . | .577 |
| | | N | 90 | 90 |
| | q20 | Correlation Coefficient | -.046 | 1.000 |
| | | Sig. (2-tailed) | .577 | . |
| | | N | 90 | 90 |

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables, except in question 12, where the p value is less than or equal p≤ 0.10, therefore statistically there is significant difference between study variables. Smaller households are more inclined to disagree (than larger households).

**Table 4-67:** Preferences: Q2 and Q6
**Kendall's tau**

| | | Age – Question 2* | Income – Question 6* | |
|---|---|---|---|---|
| Preferences | | | | |
| Q10 | | 0.138* | 0.087 | |
| Q11 | | -0.049 | 0.048 | |
| Q12 | | -0.047 | 0.031 | |
| Q13 | | -0.007 | -0.039 | |
| Q17 | | -0.06 | 0.034 | |
| Q18 | | -0.006 | 0.088 | |
| Q19 | | 0.037 | -0.029 | |
| Q20 | | 0.054 | 0.046 | |

** significant at the 0.05 level
* significant at the 0.10 level

## Interpretation:

As the p value is greater than 0.10 and 0.05, statistically there is no significant difference between the study variables except question 10 (age) where there is significant difference. All the significant associations are positive. This means that for these variables the variable increases with an increase in age (income).

# Objectives:

(a) **Gender** – Question 1* and
*Q14: I have an insurance policy only because it is required in order for my home loan to be granted
*Q15: I have an insurance policy only because of my employer's employment policy
*Q16: I would not invest in a pension fund if it were not compulsory at my place of work
*Q21: As you get older are you going to spend more or less on your investments?

**Table 4-68:** Objectives: Q1
**Test Statistics(a)**

|  | Q14 | Q15 | Q16 | Q21 |
|---|---|---|---|---|
| Mann-Whitney U | 957.000 | 897.500 | 770.500 | 942.500 |
| Wilcoxon W | 2232.000 | 1717.500 | 1590.500 | 1762.500 |
| Z | -.355 | -.855 | -1.943 | -.471 |
| Asymp. Sig. (2-tailed) | .723 | .392 | .052 | .637 |

a Grouping Variable: gender

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(b) **Population Group** – Question 4*
*Q14: I have an insurance policy only because it is required in order for my home loan to be granted
*Q15: I have an insurance policy only because of my employer's employment policy
*Q16: I would not invest in a pension fund if it were not compulsory at my place of work
*Q21: As you get older are you going to spend more or less on your investments?

**Table 4-69:** Objectives: Q4
**Test Statistics (a,b)**

|  | Q14 | Q15 | Q16 | Q21 |
|---|---|---|---|---|
| Chi-Square | 1.931 | .951 | 4.269 | 4.132 |
| Df | 3 | 3 | 3 | 3 |
| Asymp. Sig. | .587 | .813 | .234 | .248 |

a Kruskal Wallis Test
b Grouping Variable: Population Group

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(c) **Job** – Question 5* and

*Q14: I have an insurance policy only because it is required in order for my home loan to be granted

*Q15: I have an insurance policy only because of my employer's employment policy

*Q16: I would not invest in a pension fund if it were not compulsory at my place of work

*Q21: As you get older are you going to spend more or less on your investments

**Table 4-70:** Objectives: Q5
**Test Statistics(a,b)**

|  | Q14 | Q15 | Q16 | Q21 |
|---|---|---|---|---|
| Chi-Square | 2.099 | .871 | 1.926 | 2.202 |
| Df | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .350 | .647 | .382 | .332 |

a  Kruskal Wallis Test
b  Grouping Variable: job

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(d) **Source of income** – Question 7* and

*Q14: I have an insurance policy only because it is required in order for my home loan to be granted

*Q15: I have an insurance policy only because of my employer's employment policy

*Q16: I would not invest in a pension fund if it were not compulsory at my place of work

*Q21: As you get older are you going to spend more or less on your investments?

**Table 4-71:** Objectives: Q7
**Test Statistics(a,b)**

|  | Q14 | Q15 | Q16 | Q21 |
|---|---|---|---|---|
| Chi-Square | .565 | .134 | 6.182 | .027 |
| Df | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .754 | .935 | .045 | .987 |

a  Kruskal Wallis Test
b  Grouping Variable: incsourc

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

**Table 4-72:** Objectives: Q2 and Q6
**Kendall's tau**

| | | Age – Question 2* | Income – Question 6* | |
|---|---|---|---|---|
| Objectives | | | | |
| Q14 | | -0.027 | -0.051 | |
| Q15 | | 0.045 | 0.052 | |
| Q16 | | 0.037 | -0.052 | |
| Q21 | | 0.161** | 0.151** | |
| Expectations | | | | |

** significant at the 0.05 level
* significant at the 0.10 level

## Interpretation:

As the p value is greater than 0.10 and 0.05, statistically there is no significant difference between the study variables. All the significant associations are positive. This means that for these variables the variable increases with an increase in age (income).

## Expectations:

**(a)  Gender** – Question 1* and

*Q12: I would rather invest in the shares of a private business than a public company

*Q13: I would likely spend money on a guaranteed investment return than any blue chip share

**Table 4-73:** Gender:  Q1
**Test Statistics(a)**

|  | Q12 | Q13 |
|---|---|---|
| Mann-Whitney U | 954.500 | 877.000 |
| Wilcoxon W | 1774.500 | 2152.000 |
| Z | -.373 | -1.009 |
| Asymp. Sig. (2-tailed) | .709 | .313 |

a  Grouping Variable: gender

## Interpretation:

As the p value is greater than $p>0.10$, statistically there is no significant difference between the study variables.

**(b)  Population Group** – Question 4* and

*Q12: I would rather invest in the shares of a private business than a public company

*Q13: I would likely spend money on a guaranteed investment return than any blue chip share

**Table 4-74:** Gender:  Q4
**Test Statistics(a,b)**

|  | Q12 | Q13 |
|---|---|---|
| Chi-Square | .378 | 1.983 |
| Df | 3 | 3 |
| Asymp. Sig. | .945 | .576 |

a  Kruskal Wallis Test
b  Grouping Variable: Population Group

## Interpretation:

As the p value is greater than $p>0.10$, statistically there is no significant difference between the study variables.

(c) **Job** – Question 5\* and
\*Q12: I would rather invest in the shares of a private business than a public company
\*Q13: I would likely spend money on a guaranteed investment return than any blue chip share

**Table 4-75:** Gender: Q5
**Test Statistics(a,b)**

|             | Q12   | Q13   |
|-------------|-------|-------|
| Chi-Square  | 1.291 | 4.303 |
| Df          | 2     | 2     |
| Asymp. Sig. | .524  | .116  |

a  Kruskal Wallis Test
b  Grouping Variable: job

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(d) **Source of income** – Question 7\* and
\*Q12: I would rather invest in the shares of a private business than a public company
\*Q13: I would likely spend money on a guaranteed investment return than any blue chip share

**Table 4-76:** Gender: Q7
**Test Statistics(a,b)**

|             | Q12   | Q13  |
|-------------|-------|------|
| Chi-Square  | 1.668 | .958 |
| Df          | 2     | 2    |
| Asymp. Sig. | .434  | .619 |

a  Kruskal Wallis Test
b  Grouping Variable: incsourc

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

**Table 4-77:** Gender: Q2 and Q6

**Kendall's tau**

| Expectations | | Age – Question 2* | Income – Question 6* | |
|---|---|---|---|---|
| Q12 | | -0.047 | 0.031 | |
| Q13 | | -0.007 | -0.039 | |

** significant at the 0.05 level
* significant at the 0.10 level

## Interpretation:

As the p value is greater than 0.10 and 0.05, statistically there is no significant difference between the study variables. All the significant associations are positive. This means that for these variables the variable increases with an increase in age (income).

# Constraints:

(a) **Gender** – Question 1* and
*Q9 : If I made my investment decisions on my own, I would take greater risks
*Q22: If I had more children or dependants, my propensity to invest will increase
*Q24: If my income increased, I would be less cautious in my investment strategy
*Q25: If I got a new job, I would increase the number of my investments
*Q26: If my income doubled, I would increase the amount of money I invest

**Table 4-78:** Constraint: Q1
**Test Statistics(a)**

|  | Q9 | Q22 | Q24 | Q25 | Q26 |
|---|---|---|---|---|---|
| Mann-Whitney U | 773.000 | 899.000 | 779.000 | 902.500 | 862.500 |
| Wilcoxon W | 2048.000 | 2174.000 | 2054.000 | 2177.500 | 2137.500 |
| Z | -1.883 | -.827 | -1.810 | -.802 | -1.169 |
| Asymp. Sig. (2-tailed) | .060 | .408 | .070 | .422 | .242 |

a Grouping Variable: gender

## Interpretation:

As the p value is greater than $p > 0.10$, statistically there is no significant difference between the study variables except questions 9 and 24, where the p value is less than 0.10, statistically there is a significant difference between the study variables. Question 9 is significantly associated with gender, in that males are more likely to make their own decisions than females. The significance in question 24 implies that males are less cautious than females if their income increased.

(b) **Population Group** – Question 4* and
*Q9: If I made my investment decisions on my own, I would take greater risks
*Q22: If I had more children or dependants, my propensity to invest will increase
*Q24: If my income increased, I would be less cautious in my investment strategy
*Q25: If I got a new job, I would increase the number of my investments
*Q26: If my income doubled, I would increase the amount of money I invest

**Table 4-79:** Constraint: Q4
**Test Statistics(a,b)**

|  | Q9 | Q22 | Q24 | Q25 | Q26 |
|---|---|---|---|---|---|
| Chi-Square | 3.468 | .900 | 2.606 | 2.607 | 2.208 |
| Df | 3 | 3 | 3 | 3 | 3 |
| Asymp. Sig. | .325 | .825 | .456 | .456 | .530 |

a Kruskal Wallis Test
b Grouping Variable: Population Group

## Interpretation:

As the p value is greater than $p > 0.10$, statistically there is no significant difference between the study variables.

(c)  **Job** – Question 5* and

*Q9: If I made my investment decisions on my own, I would take greater risks
*Q22: If I had more children or dependants, my propensity to invest will increase
*Q24: If my income increased, I would be less cautious in my investment strategy
*Q25: If I got a new job, I would increase the number of my investments
*Q26: If my income doubled, I would increase the amount of money I invest

**Table 4-80:** Constraint: Q5
**Test Statistics (a,b)**

|  | Q9 | Q22 | Q24 | Q25 | Q26 |
|---|---|---|---|---|---|
| Chi-Square | 2.203 | .169 | .260 | .170 | 4.287 |
| Df | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .332 | .919 | .878 | .918 | .117 |

a  Kruskal Wallis Test
b  Grouping Variable: job

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(d)  **Source of income** – Question 7* and

*Q9: If I made my investment decisions on my own, I would take greater risks
*Q22: If I had more children or dependants, my propensity to invest will increase
*Q24: If my income increased, I would be less cautious in my investment strategy
*Q25: If I got a new job, I would increase the number of my investments
*Q26: If my income doubled, I would increase the amount of money I invest

**Table 4-81:** Gender: Q7
**Test Statistics (a,b)**

|  | Q9 | Q22 | Q24 | Q25 | Q26 |
|---|---|---|---|---|---|
| Chi-Square | .931 | .707 | .976 | 4.378 | .251 |
| Df | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .628 | .702 | .614 | .112 | .882 |

a  Kruskal Wallis Test
b  Grouping Variable: incsourc

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

Table 4-82: Constraint: Q2 and Q6

**Kendall's tau**

|  |  | Age – Question 2* | Income – Question 6* |  |
|---|---|---|---|---|
| Constraint |  |  |  |  |
| Q9 |  | 0.097 | 0.056 |  |
| Q22 |  | -0.082 | -0.051 |  |
| Q24 |  | -0.025 | -0.038 |  |
| Q25 |  | -0.041 | -0.032 |  |
| Q26 |  | 0.149** | 0.123* |  |

** significant at the 0.05 level
* significant at the 0.10 level

## Interpretation:

As the p value is greater than 0.10 and 0.05, statistically there is no significant difference between the study variables, with question 26 (age and income) being the exception where there is significant difference. All the significant associations are positive. This means that for these variables the variable increases with an increase in age (income).

# Risk Aversity:

(a) **Gender** – Question 1* and
*Q9  : If I made my investment decisions on my own, I would take greater risks
*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q12: I would rather invest in the shares of a private business than a public company
*Q23: To what degree are you scared to invest?
*Q24: If my income increased, I would be less cautious in my investment strategy

Table 4-83: Risk Aversity: Q1
Test Statistics(a)

|  | Q9 | Q10 | Q11 | Q12 | Q13 | Q23 | Q24 |
|---|---|---|---|---|---|---|---|
| Mann-Whitney U | 773.000 | 863.500 | 867.500 | 954.500 | 877.000 | 931.000 | 779.000 |
| Wilcoxon W | 2048.000 | 2138.500 | 1687.500 | 1774.500 | 2152.000 | 2206.000 | 2054.000 |
| Z | -1.883 | -1.121 | -1.091 | -.373 | -1.009 | -.568 | -1.810 |
| Asymp. Sig. (2-tailed) | .060 | .262 | .275 | .709 | .313 | .570 | .070 |

a  Grouping Variable: gender

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables except questions 9 and 24, where the p value is less than 0.10, statistically there is a significant difference between the study variables. Question 9 is significantly associated with gender in than males are more likely to make their own decisions than females. The significance in question 24 implies that males are less cautious than females if their income increased.

(b) **Population Group** – Question 4* and
*Q9  : If I made my investment decisions on my own, I would take greater risks
*Q11: It is likely that I would first invest in a government bond
*Q10: I would rather take the risk of investing on my own than trust an investment broker
*Q12: I would rather invest in the shares of a private business than a public company
*Q23: To what degree are you scared to invest
*Q24: If my income increased, I would be less cautious in my investment strategy

Table 4-84: Risk Aversity: Q4
Test Statistics(a,b)

|  | Q9 | Q10 | Q12 | Q13 | Q23 | Q24 |
|---|---|---|---|---|---|---|
| Chi-Square | 3.468 | 3.884 | .378 | 1.983 | 2.843 | 2.606 |
| Df | 3 | 3 | 3 | 3 | 3 | 3 |
| Asymp. Sig. | .325 | .274 | .945 | .576 | .416 | .456 |

a  Kruskal Wallis Test
b  Grouping Variable: Population Group

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

(c)  **Job** – Question 5\* and
\*Q9 : If I made my investment decisions on my own, I would take greater risks
\*Q12: I would rather invest in the shares of a private business than a public company
\*Q23: To what degree are you scared to invest?
\*Q24: If my income increased, I would be less cautious in my investment strategy

**Table 4-85:** Risk Aversity: Q5
**Test Statistics(a,b)**

|  | Q9 | Q10 | Q12 | Q13 | Q23 | Q24 |
|---|---|---|---|---|---|---|
| Chi-Square | 2.203 | 6.759 | 1.291 | 4.303 | 1.152 | .260 |
| Df | 2 | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .332 | .034 | .524 | .116 | .562 | .878 |

a  Kruskal Wallis Test
b  Grouping Variable: job

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables. In question 10, respondents who are employed by a corporate prefer to not to use brokers than those employed by government.

(d)  **Source of income** – Question 7\* and
\*Q9 : If I made my investment decisions on my own, I would take greater risks
\*Q10: I would rather take the risk of investing on my own than trust an investment broker
\*Q12: I would rather invest in the shares of a private business than a public company
\*Q23: To what degree are you scared to invest
\*Q24: If my income increased, I would be less cautious in my investment strategy

**Table 4-86:** Risk Aversity: Q7
**Test Statistics(a,b)**

|  | Q9 | Q10 | Q12 | Q13 | Q23 | Q24 |
|---|---|---|---|---|---|---|
| Chi-Square | .931 | 2.122 | 1.668 | .958 | .653 | .976 |
| Df | 2 | 2 | 2 | 2 | 2 | 2 |
| Asymp. Sig. | .628 | .346 | .434 | .619 | .722 | .614 |

a  Kruskal Wallis Test
b  Grouping Variable: incsourc

## Interpretation:

As the p value is greater than p>0.10, statistically there is no significant difference between the study variables.

**Table 4-87:** Risk Aversity: Q2 and Q6

**Kendall's tau**

| | | Age – Question 2* | Income – Question 6* | |
|---|---|---|---|---|
| Risk Aversity | | | | |
| Q9 | | 0.097 | 0.056 | |
| Q10 | | 0.138* | 0.087 | |
| Q12 | | -0.047 | 0.031 | |
| Q13 | | -0.007 | -0.039 | |
| Q23 | | 0.02 | -0.035 | |
| Q24 | | -0.025 | -0.038 | |

** significant at the 0.05 level
* significant at the 0.10 level

## Interpretation:

As the p value is greater than 0.10 and 0.05, statistically there is no significant difference between the variables of the study, with question 10 (age) being the exception where there is significant difference. All the significant associations are positive. This means that for these variables the variable increases with an increase in age (income).

### 4.4.3. T-Tests

The results of a T- test are set out in the table below. The analysis is to test whether there are statistically any significant differences in the attitudes of UKZN MBA dissertation students that are of different gender, towards questions 9 to 26. In the tables (below) where the probability value (indicated in the last column) is less than or equal to 0.05 ($p \leq 0.05$), there is significant difference in the attitudes of the respondents based on their gender (question 9). Where the probability value is greater than 0.05 ($p > 0.05$), there is no significant difference in the attitudes of the respondents between the different groups of vocation (all of the questions except question 9).

**Gender: Q9 to Q26**

Table 4-88: T-test: Q1

| | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|
| Q3.9 | Equal variances assumed | -2.477 | 88 | .015 |
| | Equal variances not assumed | -2.419 | 74.277 | .018 |
| Q3.10 | Equal variances assumed | 1.376 | 88 | .172 |
| | Equal variances not assumed | 1.395 | 87.089 | .167 |
| Q3.11 | Equal variances assumed | 1.442 | 88 | .153 |
| | Equal variances not assumed | 1.414 | 75.885 | .162 |
| Q3.12 | Equal variances assumed | .088 | 88 | .930 |
| | Equal variances not assumed | .090 | 87.975 | .929 |
| Q3.13 | Equal variances assumed | .336 | 88 | .737 |
| | Equal variances not assumed | .333 | 80.058 | .740 |
| Q3.14 | Equal variances assumed | .830 | 88 | .409 |
| | Equal variances not assumed | .833 | 84.859 | .407 |

| | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|
| Q3.15 | Equal variances assumed | -1.139 | 88 | .258 |
| | Equal variances not assumed | -1.117 | 76.147 | .268 |
| Q3.16 | Equal variances assumed | -.863 | 88 | .390 |
| | Equal variances not assumed | -.859 | 82.177 | .393 |
| Q3.17 | Equal variances assumed | 1.475 | 88 | .144 |
| | Equal variances not assumed | 1.526 | 87.408 | .131 |
| Q3.18 | Equal variances assumed | .154 | 88 | .878 |
| | Equal variances not assumed | .155 | 85.244 | .877 |
| Q3.19 | Equal variances assumed | -.530 | 88 | .597 |
| | Equal variances not assumed | -.541 | 87.789 | .590 |
| Q3.20 | Equal variances assumed | 1.411 | 88 | .162 |
| | Equal variances not assumed | 1.381 | 75.289 | .171 |

## 4.5. Conclusion

The survey was conducted by administering the questionnaire to a sample unit of one hundred and forty (140) UKZN MBA dissertation students. A response rate of 64% of answered questionnaires was achieved. The data was then collated, analysed and presented using the SPSS software. Sub-section 4-2 looked at the information obtained in terms of Part 2 of the questionnaire and at the specific demographics of the respondents relative to each other. It presented the descriptive statistics of the demographic factors of gender, age, confirmation of UKZN MBA dissertation registration, population group, vocation, and income, source of wealth and family composition.

It also presented the descriptive statistics of the information received from the participants in terms of Part 3 of the questionnaire. Part 3 of the questionnaire contains eighteen questions of which each question relates to either a different type of investment or the different reasons for making particular investment decisions.

Sub-section 4.4 and sub-section 4.4 used inferential statistical techniques (Chi-Square, Kendall's tau, Mann-Whitney U, Wilcoxon W and T-tests) to present the demographic data and the data related to the investment strategies of the respondents. The Cronbach Alpha test confirmed the internal validity of the study variables.

The next chapter will be an analysis and interpretation based on the findings in relation to the objectives. Chapter 5 will also discuss the findings in relation to similar work of other researchers and will describe the limitations of the empirical study.

*Chapter 5*

# 5. Analysis, Interpretation and Limitations of the Findings

## 5.1. Introduction

This chapter contains an analysis of the findings obtained from the collative responses of the respondents. It also contains interpretations relating to relationships between the literature reviewed in Chapter 2 and the empirical research findings.

The problem faced by the researcher is to investigate if the UKZN MBA students are risk averse. The objectives of the analysis are to identify the factors that indicate that the UKZN MBA dissertation students are risk averse, to prove that they are risk averse and to explore the differences, if any, in the risk aversity between the male and female students. The analysis and interpretation concerning the objectives, expectations, preferences and constraints of all the respondents assists in achieving the objectives so as to solve the problem statement.

Whilst the analysis could be presented on a per-question or per-objective basis, it is best to present it in the manner that is applied in this chapter. This is to ensure fluidity and a holistic approach in presenting a logical analysis so that overriding discussion and interpretation of this chapter is clearly understood.

This chapter sets out, firstly, an analysis of the demographic responses, secondly, an analysis of the factors indicating risk (in terms of the respondents' objectives, expectations, preferences and constraints), thirdly, an analysis of the responses to specific risk related questions, fourthly, the findings of the T-test undertaken to scrutinise the perceptions between the male and female attitude to risk, and fifthly, the findings that relate to internal validity and reliability. These are followed by the researcher's overall interpretation of the findings for each question and an interpretation of the findings in conjunction with the literature previously reviewed. A conclusion is presented thereafter.

## 5.2. Analysis of empirical findings

### 5.2.1. Demographic Responses

An analysis of the demographic information was undertaken to understand the profile of the respondents.

**Question 1: Gender**

Based on the number of responses received, the gender dispersion was 44% female and 56% males.

**Question 2: Age**

Majority of the respondents were between 31 to 35 years old (male 24% and females 20%) with none of the respondents being between 20 to 25 years (which is in terms of the minimum requirement of 25 years of age for the MBA degree). The questionnaire was not administered to persons over 55 years of age. The eldest student was within the category of 50 to 55 years of age.

**Question 3: UKZN MBA 3 students**

The qualifying criterion to be participant was his or her then current registration as a UKZN MBA dissertation (MBA 3) student. All the participants qualified as respondents.

**Question 4: Population Group**

In terms of population group, the Indian male and female respondents were the same percent, that was, 22.2% respectively. The Coloured population group had a similar pattern in that 1% were females and 1% were male. Amongst the Blacks, the number of females was 13.3% with the males being 20%. The Whites were 8% females and 12% males.

**Question 5: Vocation**

Most of the respondents were employed by corporate business, of which 32% were male and 26% female. The second biggest employer was government, 8% of which workers were females and 14% males. The pattern was the same for consultants and self-employed persons in terms of male and female dispersion (3% each).

### Question 6: Household Income

In the income groups, most of the respondents earned between R31000 to R40 000 (18% female and 32% male), with the income of females in the R21 000 to R30 000 category being 16% and the males, 13%.

### Question 7: Wealth

Salary was the most popular source of income. It accounted for 67% of the source of total income for all male and female respondents.

### Question 8: Household Composition

Most of the respondents' households consisted of two adults (60%) and twenty percent (20%) had three adults. The majority of the households had no dependents (37%), 21% had one dependent and 22% have two dependents. Twenty-six of the households consist of three persons (adults and dependents).

### 5.2.2. Objective 1: To identify the factors that indicates risk aversity

**Preferences:**

In order to explore the factors that indicate risk aversity, in terms of the preference of strategies, the following variables were investigated:

- whether the investment strategy of the respondents is based on attitude towards risk and trust of a broker (Question 10);
- the preference for either stable or volatile shares (Question 12);
- the preference for stable, consistent long term returns (Question 19); and
- the preference for volatile, risky, short-term investments (Question 20).

Inferential statistical tests (Chi-square, Kendall's tau, Mann-Whitney U and Wilcoxin-W) were used to analyse the above variables associated with the preferences of the respondents in conjunction with each of the demographic variables. The tests revealed the following:

- none of the variables were significantly associated with gender;
- none of the variables were significantly associated with the population groups;
- question 10 (I would rather invest on my own than use an investment broker) was significantly related to the vocation of the respondents. Respondents who were employed by corporate companies disagree more

(they prefer to use a broker) than those employed by government (who agree more, meaning they prefer to invest on their own) and own employed respondents (who would rather use a broker and disagree to a lesser extent);

- statement 10 was also the only question where there was significance related to age, in that respondents above the age of 30 disagree more (prefer to use brokers) than those 30 years or younger;

- none of the variables were significantly associated with the sources of income of the respondents' household; and

- in question 12 (prefer investing in the shares of a private business to that of a public company), smaller households were more inclined to choose options 6 to 10 (than larger households), in that they preferred investing in (risky) shares. Households of size 5 or more choose options 1 to 5 and were slightly less likely (than those consisting of four or less people) to invest on the property market.

### Expectations:

In light of the different expectations of the investors and the effect on their risk tolerance, the following variables were chosen to form part of the study:

- whether the investor wants to have direct control over the vehicle of risk - in terms of preference for either stable or volatile returns (Question 12); and

- whether the investor has a need for stable guaranteed returns regardless of return rate (Question 13).

The above variables were analysed with each of the demographic variables to understand how their expectations could be factors that indicate risk aversion of the respondents. The results of the inferential statistical tests are described below:

- none of the variables were significantly associated with gender;

- none of the variables were significantly associated with population group;

- none of the variables were significantly associated with job;

- none of the variables was significantly associated with source of income;

- question 12 (I prefer to invest in the shares of a private company than that of a public company) was significantly associated with size of the household. Respondents from smaller size households (3 or less persons) choose

options 6 to 10 and were more likely (than households with size 4 or more people) to disagree with this preference;

- none of the variables were significantly associated with age; and
- none of the variables were significantly associated with income.

**Objectives:**

Concerning the objectives of the investment decisions as factors of risk, the following variables were examined:

- whether investment is necessary for the investor to secure liability (Question 14);
- whether investment is undertaken by the investor to compensate for potential risk (Question 15);
- whether the investment is a compulsory requirement for the investor, for example, to qualify for a home loan (Question 16); and
- whether the long term goal of the investor is to increase or decrease investment and related risk (Question 21).

The investment strategy data was analysed using the above variables in conjunction with the demographic variables to understand the objective factors that affect risk tolerance of the respondents. Statistical inferential tests revealed the following:

- none of the variables were significantly associated with respondent gender;
- none of the variables were significantly associated with respondent population group;
- none of the variables were significantly associated with respondent jobs;
- only question 16 (I would not invest in a pension fund if it were not compulsory at my place of work) was significantly associated with source of income. Respondents in the "salary only" and "other not salary" categories disagree more strongly than those in the "salary and other" category;
- only question 21 (As you get older, are you going to spend more or less on your investments?) was significantly associated with size of household. Respondents with smaller size households (4 persons or less) were more inclined (than those with 5 or more people) to invest more as they got older;

- only Q21 (As you get older, are you going to spend more or less on your investments?) was significantly associated with age. As proportion of the respondents who choose options 1 and 2 got fewer with the increase in age; and

- only question 21 (spending more or less on investments when you get older) was significantly associated with income. The higher the income of the respondent, the more they were inclined to reduce their investment amount.

**Constraints:**

With reference to the constraints as factors in making decisions that affect the risk aversity, the following variables were investigated:

- how decision-making power affects the investor's choice of risk when their own preferences are limited (Question 9);

- whether the limitation of personal responsibilities of the investor affect the propensity to invest (Question 22);

- how does the constraint of income affect the investor's degree / attitude of risk (Question 24);

- how does the constraint of the investor's job impact on the investment amount (Question 25); and

- what is the effect of the constraint of income of the investor on the investment amount (Question 26)?

The demographic data was analysed in terms of the variables associated with the constraints of the respondents using inferential statistical tests. The following were revealed by the tests:

- question 9 (If I made my investment decisions on my own, I would take greater risks) was significantly associated with gender. Males were more likely to make their own investment decisions than females. Question 24 is also significantly associated with gender and the responses implied that males would be less cautious than females if their incomes increased;

- none of the variables was significantly associated with population group;

- question 25 (If I got a new job, I would increase the number of my investments) was significantly associated with source of income.

Respondents in the "other not salary" category were more likely (than the other two categories) not to increase investments with a new job;

- question 26 (increasing investment with doubling income) was significantly associated with size of household. Respondents from smaller household size (3 or less people) were more unlikely (than those from households with 4 or more persons) to increase investment with doubling of their income;

- question 26 was significantly associated with respondent age. Respondents were more inclined to invest more as they got older; and

- question 26 was significantly associated with respondent income.

### 5.2.3. Objective 2: To prove that the students are risk averse

In sub-sections 5.2.2 and 5.2.4 all of the below-mentioned variables were analysed with the demographic variables to confirm whether the respondent views were limited to a particular demographic profile. In light of investigating the extent of the investor's overall attitude toward risk, the following variables were examined:

- whether the investor prefers greater risk (Question 9);

- the preference of a cautious strategy (Question 10);

- the investor's preference for either stable or volatile returns (Question 12);

- the preference for minimum guaranteed returns compared to uncertain loss or gain (Question 13);

- the investor's degree of risk aversion (Question 23); and

- the effect of the level of investor income on the degree and attitude toward risk (Question 24).

Upon analysing the demographic data the variables associated with the risk aversity of the respondents, the inferential statistical tests revealed the following:

- question 9 (taking greater risks when making own investment decisions) was significantly associated with gender. Males were more likely (than females) to take greater risks when making investment decisions on their own. Question 24 was also significantly associated with gender in that the results implied that males were less cautious than females if their income had increased;

- none of the variables was significantly associated with population group;

- question 10 (I would rather take the risk of investing on my own than trust an investment broker) was significantly associated with job. Respondents with corporate jobs are more inclined to disagree (than respondents in other job categories);

- none of the variables was significantly associated with source of income;

- only question 12 (prefer to invest in the shares of a private business to that of a public company) was significantly associated with size of the household. Respondents from households with size 3 or less were more inclined to choose options 6 to 10 (than those from households with size 4 or more) with preference for investment in shares of a private business to that of a public company;

- question 10 (rather take own risks than use a broker was significantly related to age. More respondents above the age of 30 years chose options 6 to 10, in that they preferred to use a broker, whereas, those 30 years or younger who preferred not to use a broker; and

- none of the variables was significantly associated with income.

### 5.2.4. Objective 3: Differences and similarities of the gender perceptions of risk

The results of the T- tests revealed that both the male and female respondents had similar perceptions towards the study statements. Accordingly there were no huge differences in the opinions based on gender. The only exception was the results for question 9, where it was found that the male and female respondents had significantly different perceptions and opinions. In question 9, the males chose the less risky choice and the females were more risk averse and cautious in their choice.

### 5.2.5. Internal Validity and Reliability

A reliability test based on the Cronbach Alpha method was undertaken to compare the Cronbach reliability co-efficient of three variables on a ten-point scale. The reliability analysis of the continuous variables revealed that the Cronbach Alpha value was 0.647, which is nearer to 0, 7. As the results implied that the questionnaire study variables had a reliability measure that was closer to the value of 1. This proved that the study had internal validity and reliability.

The test was based on the following three variables which were measured on a ten point scale:

- question 5 (respondent vocation): in terms of government, corporate and own (which included consultants, self-employed and family business) employment;

- question 7 (respondent household source of income): in terms of the following categories: salary only, other not salary , and, salary and other; and

- question 8 (respondent household composition of adults and dependents): in terms of household size.

## 5.3. Interpretation of empirical findings

A discussion of the analysis and interpretation of each question of Part 3 of the questionnaire, in relation to the stated objectives, is set out below. It was necessary in some instances to group the responses to certain questions together or to present them in an order that was not in the same numerical order as that of the questionnaire, to better illustrate specific thought processes and trends in the findings, in order to resolve the problem statement.

### Question 9: (Overall Risk and Constraints)

With reference to question 9, investment decision-making, in terms of gender, the majority of the respondents were uncertain, leaning toward very unlikely (31% chose option 6), as to whether they would take greater risks if they made their investment decisions on their own. The difference in male and female opinion concerning options 5 and 6, was just 1%, (15,6% female and 16.7% male), showing that if both male or female made their own investment decisions, the level of risk of those investments would be the same as when someone else made their decisions for them.

Seven percent of the respondents were of the opinion that it is very likely (option 1) that they would take greater risks if they made their investment decisions on their own. Five female respondents and one male respondent chose option 1. Both the male and female respondents had similar perceptions regarding option 10 (very unlikely). When this variable was measured as a constraint, it is deduced that most of the

respondents did not have an opinion (or an idea) whether or not their degree of risk taking is constrained when someone else makes their investment decisions for them.

Twenty seven respondents (options 1 to 4) felt that if they made their own decisions, it would affect their level of risk, thereby implying that someone else making decisions on their behalf, is a constraint in terms of the higher degree of risk that they would have taken had they acted themselves. Therefore usage of a broker was a factor that indicated a less cautious choice of investment and decreased risk aversity.

**Question 10**

When asked whether they would rather take the risk of investing on their own compared to using an investment broker, 15% (8% female and 7% males) chose option 6, indicating that it did not matter who made the investment decision. It was found that more respondents chose to use an investment broker.

Most of the respondents (56%) reported that they would rather use an investment broker than take a risk based on their own judgement. Of the total, 10% strongly disagreed (option 10) and 13% chose option 9, in that they would rather invest on their own. The female and male respondents were of the same opinion, of which most females chose options 7 and 8 compared to the males. Most males chose "strongly agree" (option 10) compared to fewer females.

This indicated that more respondents preferred not to risk making decisions on their own, although more males felt strongly about this. This showed that majority of the respondents are risk averse, with a greater degree of risk aversity among females and that the use of brokers may have decreased risk aversion.

Thus a factor that affected the risk aversity was whether the respondent made the decision on his or her own. If the decision was made by the respondent alone, then this factor resulted in a more cautious approach to risk.

**Questions 11 and 18 (in conjunction with questions 17, 19 and 20)**

In terms of the preferences between government bonds, property, the stock exchange, retirement annuities or unit trusts the following was discovered from the responses: Most respondents preferred to invest in property (43% chose option 1 and 20% chose option 2) which is a stable investment.

Twenty one percent (21%) of the respondents chose option 1, 9% chose option 2 and 16% chose option 3, indicating their preferences to invest in the stock exchange, which is a risky investment. Of the respondents, 11%, 13% and 12% (options 1 to 3, respectively) preferred retirement annuities and 12%, 3% and 12% (options 1 to 3, respectively) preferred to invest in unit trusts.

The above illustrates that more respondents initially preferred the safer choice of a property investment and were thereafter willing to take a greater risk on the stock exchange. The choices indicated that having a permanent shelter to live in, was more important than saving for retirement. (Whilst investment in property is also an indirect form of retirement saving, it is only of use if the retiree has cash flow for living expenses).

Thereafter the students were willing to take a greater risk on the stock exchange. On average, only 20% of the respondents were indifferent or uncertain (options 5 and 6) regarding their preferences for each of the choices. 56% indicated that they would not have invested in the safer choice of government bonds (25% felt strong, 14%, 10% and 7% chose options 2 to 4, respectively). The unlikely attitude expressed about investing in government bonds shows that although stability was required, the students still preferred a bigger return, therefore, investment in property was preferable to investments in government bonds. The above also illustrates that the investment vehicle that was available at the time of decision-making was a factor that affects aversion toward risk.

**Questions 12 and 13**

In comparing the preferences regarding shareholding in either a private or public business and a guaranteed return or a blue chip share the following was discovered: More students preferred to invest in public shares (61% chose options 6 to 10), indicating higher risk preference compared to those who preferred investing in a private business (29% chose options 1 to 5), and 44% who chose (options 1 to 4 ) a guaranteed return compared to 35% (options 7 to 10) who chose investments in a blue chip company.

Twenty one percent (21%) chose option 6, which indicated a degree of neutrality or uncertainty leaning towards investment in riskier blue chip shares. This indicated that the students were not risk averse in their approach towards investing.

The responses relating to investment in blue chips shares, public shares and the stock exchange showed an average of 50% preference by the students in riskier, less risk averse, choices. Overall, the preferences were firstly, investment in guaranteed returns, secondly, in public shares, thirdly, in blue chip shares, and fifthly, in private companies.

In terms of gender, more males (34%) than females (21%) did not prefer to invest in government bonds. The percentage of females that preferred government bonds was 2% greater than men, in the combined 1 and 2 options and the combined 3 and 4 options. This shows that females preferred a safer option and were more risk averse in light of the decisions they made.

Over the issue of the choice of private and public shares, more males than females (2% more) chose the shares of a public company. This shows that there was only a slight difference in the choice of investment and the related risk. This variable when being applied to measure the expectations of the investor showed that 61% of the respondents, that was those that preferred volatile public shares, had higher expectations in terms of possible higher returns. Of this, 21% females compared to 32% males preferred riskier (options 7 to 10) investments.

The students were willing to take greater risks for a higher return, however, females were more risk averse. More females chose options 5 and 6, which showed that females were more (4%) unsure about which option they preferred (stable or volatile), in terms of return expectations. Therefore the possibility of obtaining higher returns was a factor that indicated the extent of risk that the MBA students were willing to take. This implies that in wanting higher returns, the students were less risk averse.

Regarding the choice of guaranteed investment return and blue chip shares, in the combined, 9 and 10 category, 1 and 2 category, and 3 and 4 category, the results were on par in terms of gender (14%, 6%, and 12% respectively). Only in options 7 and 8 was there a difference in that more men than women would unlikely invest in investments with guaranteed returns, meaning that the male respondents preferred riskier investment.

Overall, though, more respondents (44%) preferred a volatile blue chip share with a higher return than a guaranteed investment return (35%). The possibility of getting higher returns (indicative of less risk aversity) was a more important factor than

guaranteed returns (which indicated more risk aversity). When analysing this variable as an expectation, the expectation of women and men were the same: majority preferred the possibility of risky higher returns than a guaranteed minimum return, with the exception being 8% of the respondents.

More men had the above expectation compared to females. This means that the expectations of men in light of investments they made are higher. There was only a slight difference (on average 2%) for each category of choice in the attitudes towards a preference for property investment, which indicated that their choice of risk was of a similar degree in terms of gender.

Overall males and females had similar attitude (by choosing options 4) to invest on the stock exchange, although more men preferred this type of investment than females. This shows that the male respondents preferred a riskier choice compared to the female respondents. The expectation of the respondents to have direct control of the investment vehicle (in terms of guaranteed returns with low risk) implied that the type of vehicles and the expectation of the respondents were both factors that indicated the extent of risk aversity.

**Question 19**

Of the different types of investments, retirement annuities were where most women had been uncertain in opinion compared to men. More male students compared to the females preferred retirement annuities. In terms of the extent of their agreement, there was a preference in each of the combined options of 1 and 2 and the combined options of 3 and 4. There was a disparity between options 9 and 10 in that 15 respondents chose option 10 and 5 chose option 9.

There was also a degree of disagreement between options 6 and 7, in that 3 respondents chose option 6 and 12 chose option 7. The preference for an investment vehicle with stable, consistent returns that offer long-term security (as symbolised by the choice of retirement annuities) was therefore considered a factor indicative of low risk aversity.

**Question 20**

Unit trusts are a portfolio of shares on the stock exchange that are invested via a portfolio manager. Of the different types of investments the choice of unit trusts was where the most male were uncertain (leaning toward option 5 or likely) in opinion.

However, this percentage was slightly more in terms of the females' choice of unit trusts. Overall, the findings indicated that more male respondents preferred unit trusts as an investment vehicle, and showed that female respondents were slightly more risk averse to the unit trust market.

Generally the preference for a volatile, risky, short term investment is a factor that indicates less risk aversity. However, the uncertainty displayed by the respondents regarding unit trusts, showed their lack of preference for volatile, risky and short-term investments and their lack of tolerance for risk. Therefore by implication investment vehicles that are volatile and risky are factors that indicate greater risk aversity.

**Question 14 and 15**

Most respondents (27%) strongly disagreed by choosing option 10, 8% chose option 9 and 12% chose option 8 indicating that they have an insurance policy not only because they require it as security against their home loan mortgage). Out of the total responses, 21% strongly agreed (by choosing option 10), 8% chose option 2 and, 4% chose options 3 and 4, respectively, indicating that the only reason that they had an insurance policy is that they required it as surety against their home loan mortgage.

Therefore, based on the objectives for investing, there was a clear indication that investment in insurance policies was not just to secure a home loan or to reduce the risk of loss in terms of liability. It is inferred that the respondents' objectives for insurance policies may also have been a strategy for investment purposes.

With regard to question 15, most respondents strongly disagreed (37%) by choosing option 10,13% chose options 8 and 9, respectively, indicating that they did not have an insurance policy only because they required it in terms of their employers' employment policy. Of the total number of respondents, 10% strongly agreed (by choosing option 10), 3% chose option 2 and 3, respectively, indicating that the only reason that they had an insurance policy was that they required it in terms of their employers' employment policy. Therefore the necessity to secure surety is a factor indicative of low risk aversity and the objective to compensate for potential future loss is a factor indicative of high risk aversity, as indicated by using the example of insurance policies.

When considered in the context of limiting potential risk, there was an overwhelming response, 72% (comprising options 7 to 10), which showed that the

insurance policies of the respondents were not required because of a work related obligations. Eleven percent of the respondents choose option 6, indicating uncertainty, but leaning toward disagreement rather than agreement. Therefore the objective of taking out an insurance policy was not because the insurance policy was required to satisfy a surety requirement or to meet a work related obligation. It is inferred that the respondents' objectives for insurance policies are purely for investment purposes.

### Question 16 and 19

The results for Question 16 were similar to the above outcome. However, the question relates to pension funds and not insurance policies. Insurance policies are long-term assurance and may be acquired to reduce personal (and the employers') liability and obligations for life, disability, trauma or injury purposes. Pension funds are also long-term to secure an income after the retirement of the respondents. By implication investment in pension is regarded as tool for long-term financial security and is appropriate for people that are risk averse, that is, for those that do not like taking chances.

Most respondents strongly disagreed (42%) by choosing option 10, twenty percent (20%) chose options 9 and twelve percent (12%) chose option 8, indicating that they invested in a pension fund not because it was compulsory at their place of work. Of the total number of respondents, 6% strongly agreed (by choosing option 1), 2% chose option 2 and 4% chose options 3, indicating that the respondents invested in a pension fund because it is compulsory at their place of work. As majority of the respondents (85%) chose options 6 to 10, this indicated that their objective for investing in a pension fund was not because it was compulsory at their place of work. This also indicated that 76% (options 7 to 10) preferred a less risk averse strategy in terms of pension planning.

The findings related to retirement (Question 19), showed that 58% (options 5 to 10) of the respondents preferred to invest in retirement annuities. By the application of inference the students preferred a less risk averse strategy in terms of long-term retirement and pension planning. Therefore stability and guaranteed returns of investment are factors that affected their risk aversity as it is inferred that they are to a great extent considered as necessities for long-term security and being able to increase or decrease long-term related risk.

**Question 21**

The majority of the respondents (20% who chose option 1), of which the opinions of the females and males were similar, indicated that they would have definitely spent more on their investments as they got older. Of the total number of respondents, 15% indicated that they were neutral or indecisive in their decision, in that they did not know whether they would spend more or less in future. Of the fifteen percent, 4% of the respondents leaned more toward spending less on their investments in the future. This indifference may have been an indication that such students (15%) did not plan their future investment strategies.

Seven percent (option 10) of the respondents indicated that they would definitely spend less on their future investment decisions. In total 37% (options 6 to 10) of the respondents indicated that they will decrease their investments, as they get older. More male respondents indicated that they would have increased their investments as they get older (options 1 to 5) and more females choose options 5 and 6. Therefore, it may be inferred that more female than male respondents have not decided on their future plans. The long-term plans that increase or decrease risk were not considered as a factors indicative of the extent of risk that the students were willing to take, only because the students were uncertain or had not decided on their future plans.

**Question 22**

Most of the respondents (10%) chose option 2, indicating that their propensity to invest would have increased if they had more children or dependents. Eighteen percent choose options 5 and 6. The number of men that remained uncertain (option 5 and 6) over whether their propensity to invest would increase if the number of their dependents or children increased was less than that of the females (11% of females and 7% of men).

More of the female respondents felt that their propensity to invest would have increased, if the number of their dependents or children had increased, than that of the male respondents. These results illustrated a difference in the attitudes of gender. In terms of the degree of the opinion, 5% of males chose option 1 (very likely) compared to 1% of females, and 2% of males chose option 10, (very unlikely) compared to 11% females.

More females were of the view that their propensity to invest would have decreased, if the number of their dependents or children increased, than that of males.

The statistics showed a difference of only 1% in the attitudes of gender. This means that fewer female respondents viewed dependants and children as constraints in their ability to invest more. However, the women were divided in their opinion, with 1% choosing option 1 and 11% choosing option 10.

The fact that there was no established pattern concerning female opinion towards their propensity to invest could have implied that females were not the decision-makers in their households and therefore could not have readily answered such question. Based on the above, it was inferred that personal responsibilities (for example, dependents and children) of the investors did not affect their propensity to invest and were not factors indicating risk aversion.

**Question 24**

When measuring whether the respondents would have been less cautious in their investment strategies if their income had increased, it was found that more respondents (49%) felt that they would not have been less cautious (that is, they would have been more risky) in their investment strategies if their income had increased. The difference in male and female opinion was on average 1%.

The above indicated that more of the respondents were willing to take risks (not be cautious) in their investment strategies if their income had increased than those that are not willing to take risks (cautious). Therefore, it is inferred that income was a constraint to the degree of risk taken in terms of investment strategies of the students. From the above it was apparent that the constraint of income affected the extent of risk that the participant was willing to take and was therefore a factor indicating risk aversion.

**Question 25**

When measuring whether the respondents would have increased the number of their investments if they had got new jobs, it was found that more respondents (51%, comprising 22%, 9%, 12% and 8% from options 1 to 4, respectively) were of the view that they would had increased the number of their investments if they had got new jobs, of which the majority were male respondents.

More of the respondents were of the opinion that they would have increased the number of their investments if they had got new jobs than those who would have increased the number of their investments if they had not found new jobs. Therefore, it

is inferred that jobs could have been a constraint to the number of investments held by the respondents.

Question 25 had the most number of uncertain responses (options 5 and 6). Respondents who chose option 5, leaning toward likely accounted for 22% and respondents, who choose option 6, leaning toward unlikely, accounted for 8%. This indicated that a substantial number of respondents had not given thought to their jobs as having been a factor of the number of investments that they held. The uncertain views of female respondents were similar to the male respondents. The above analysis implies that job security affected the investment amount and was therefore a factor indicating risk.

**Question 26 and question 24**

When measuring whether the respondents would have increased the amount of money they invested if their income had increased, it was found that more respondents felt that they would have increased the amount of money that they had invested if their income had doubled (43%, 23% and 9% choose options 1 to 3, respectively). Of the total responses there were very little differences in the percentage choice between the males and females.

The above means that more of the respondents would have increased the amount of money that they had invested if their income doubled, than those whose income had not doubled. Therefore, it was inferred that income was a constraint to the amount of money spent on investment. This indicated that income was a factor that affected the investment amount, which in turn affected aversity toward risk. It also showed that the level of income was a factor that indicated the degree of risk aversion. Analysing this question together with question 24 ("if my income increased I would be less cautious in my investment strategy"), it is deduced that it is not just income that was a constraint, but also the amount of income.

**Question 23 and all other questions of Part 3 of Questionnaire**

Perhaps it was because of the straight forward manner in which the question was asked or the fact that the respondents had not previously given thought to this kind of question, but when asked, "To what degree are you scared to invest?" the majority of the respondents chose to remain uncertain, with the difference in opinion between

females and males being only slight. Based on the response to the above question, it appeared that males were more scared to invest than females.

The statistics for this question did not correlate with some of the responses to the other questions. The analysis of most of the above questions proved that the female respondents were more risk averse than the male respondents. Therefore by inference, and based on question 23, (where the male respondents were less risk averse than the female respondents), the degree of risk aversity was different among the male and female respondents depending on the framing of the question, the options available and the type of investment.

## 5.4. Interpretation of findings in relation to literature reviewed

Based on the above analysis, interpretation, and the related theory obtained from the literature review, this sub-section sets out the following inferences that were drawn regarding the extent of risk aversity, the similarities and disparities in the risk aversion between the male and female students and the factors that were indicative of risk in the investment strategies of the sample:

A small percentage of the respondents felt that if another person made their investment decisions for them, it would have constrained the higher-level risk that the respondents would have preferred. Most respondents did not consider other people making their investment decisions for them as a constraint to the higher degree of risk. Generalising this to the survey population, it implied that regardless of who made the investment decision, the level of risk taken would not have been any less than if the graduate made the investment on his or her own.

However, the above findings were contrary to the view of van Tonder (2006) that states that the respondents (single females) consider the opinion of their financial advisor, and not anyone else, as most important. The above attitude is different to that described by Strong (2004). In Strong's (2004) study reference was made to an investor that is indifferent to risk and therefore risk neutral. In this study the students were not generally indifferent and were therefore not risk neutral.

The majority of the respondents, more of whom were male, preferred not to risk making their own decisions. This proved that the majority of the respondents were risk averse with a greater degree of risk aversity among the females. These findings could be attributed to Bloch's (2006) rationale which states that a dread of financial issues and

having to cope with them leads to dangerous behaviour such as the inability to deal with changes in investment situation and trusting or relying on the wrong people.

Given the fact that the respondents were intelligent people with a theoretical knowledge of finance and economics, the majority chose not to make their own investment decisions, and this seemed to indicate that the respondents had been financial phobics or that the respondents' simply trusted the judgement of professional brokers more than their own judgement. Bloch's (2006) opinion is that the Cambridge study suggests that financial phobics are intelligent and perfectly competent in other areas of their lives but are dumb struck at the notion of dealing with their money.

However, to test the reasons for the decisions of the respondents in terms of the above, more detailed information relating to (1) the respondents' and (2) the respondents' relationships with their investment brokers, was required. This study did not entail an investigation into the types or classes of people that were financial phobics.

In terms of the choice as to investment preferences between government bonds, property, the stock exchange, retirement annuities, or unit trusts, seventy percent of the investors preferred the safer choice of a property investment. Whilst the choice of property might have been perceived as risk averse, the responses to other questions relating to riskier options indicated that the choice of property could be based on Maslow's theory of the hierarchy of needs, being the need for security and shelter.

Alternatively, the respondents' attitude had been because of the illusion of representation as described by Brabazon (2000). The respondents may have assumed the stereotype that the property market would have continued to escalate in the future because of recent events or by the illusion of having held separate mental accounts to maintain safe accounts or spend available funds. Such representativeness could have also been attributed to the respondents who were less experienced, as described by Shefrin (2000). Their choice indicated that regardless of the chance of earning a higher return, the students' first priority in terms of investment decisions was toward securing long-term stability in the form of shelter.

The decision of the respondents could have been attributed to the concepts of mental accounting and self-control described in the Prospect Theory. Based on Brabazon's (2000) expansion of the theory, the students may have mentally divided and

treated each element of their investments separately. For example, their property portfolio may have been managed within the perspective of being risk averse and playing it safe, and their investment in blue chip shares could have been separately managed. However, to corroborate if the above theories were applicable to the respondents, more detailed information on the reasons for the respondents' investment strategies and decisions was required.

More than half of the respondents indicated an interest to invest in government bonds. Although their attitude showed that stability was required, the students still preferred bigger returns, therefore investment in property was preferred to investment in government bonds. Another view on the above localised reason for the choice of property could have been because of availability bias. According to Brabazon (2000), investors place undue weight only on information that is at hand when making a decision. In this scenario, the current increase in property investment in SA could have also been because of the availability bias expressed by the respondents.

After property, the next preferred choice was that of investment on the JSE. Similar results were found in terms of the choice in public shares or blue chip shares. The above indicated that the students were not risk averse in their approach towards investing (once their needs for household shelter and security are met), and preferred more volatile, less risk averse types of investments. Another reason for property being their first choice and not public shares, could have been attributed to Strong's (2004), statement that since everyone takes risks, it's not about people not taking risks, but, about the avoidance of risk or the avoidance of the uncertainty of winning.

The attitude of the students differed when presented with different choices of investments in the same question. When given a single type of investment preference to rate choice, the respondents were more risk averse in their decisions; however, when presented with two choices of opposing risk in the same question, higher risks were preferred. Therefore the level of risk aversity was not solely based on the type of investment, but the choices or options faced at the same time that the purchase decision was made. Another rationale for the respondents being more risk averse when faced with a single investment could be because of regret aversion described by Brabazon (2000). Accordingly the respondents could have tried to avoid similar emotional pain to that which they felt when they had incurred a previous financial loss.

Therefore the manner, in which the questions were framed, had also impacted on the level of risk tolerance. This was consistent with Shefrin (2002), who stated that the way a problem or decision is presented to the decision maker will affect their action. In illustration of the above, when given a single option to invest in government bonds (or in another question property), more females preferred investing in government bonds. These bonds are a safer option, thereby proving that the females were slightly more risk averse.

Conversely, when presented with two options to chose from (shares of a public or private nature), majority of the females preferred the more risky choice of public shares. This was also evident in the question regarding the choice between a guaranteed return and a blue chip shares. The above decision may have also been because of the rationale that the outcome is dependent on how the risk is defined by the individual investor, as advocated by Strong (2004).

Johnson *et al.* (2003) found that the common stereotype that women are more risk averse is true with the caveat being that men and women react differently to the framing of risks. This study therefore corroborates the findings of Johnson *et al.* (2003), in that an exception to the stereotype that women are more risk averse than men, is that the risk attitudes of professional men and women are not generally different.

Although both the male and females equally preferred riskier options and therefore higher returns, slightly more male students choose riskier options and therefore have higher expectation in terms of higher returns. This corroborates the findings of Grable (2000) in so far as the respondents that are professional men, with higher education, income and financial knowledge have higher economic expectations and are more risk tolerant. However, this study did not enquire of the marital status of the respondents and as such cannot corroborate with all of the findings of Grable (2000).

The above inference could be negated if viewed in terms of the opinion of van Tonder (2006), who states that higher returns may be gained by women who trade less often due to their awareness of potential risk. There was on average a small percentage (for each category of choice) in the difference in attitude of the respondents towards a preference for property investment, which indicated their choice of risk was of a similar degree. In addition, Dwyer et al. (2002) were of the view that it was only the non-

professional females that are conservative, not the professional females (who in this survey are the female respondents).

The value of a unit trust is market-dependent and hence it is an unstable and risky investment. More males preferred to invest in unit trusts. Whilst this may infer higher risk aversity of females, the reason may not have been because of risk aversion but because of a lack on knowledge of unit trusts by the females. Another possible reason could be in line with the suggestion of Johnson *et al.* (2003), which cites Arch (1993), where it was reported that males see a risky situation as a challenge that requires participation while females tend to respond to these situations as threats that encouraged avoidance. The male respondents may have viewed the risk as an opportunity for higher returns and the females chose to avoid the threat of losing their money.

Another reason for the reluctance of the female respondents to purchase unit trusts could have been based on the findings of Graham *et al.* (2002), who state that females are also less impulsive and not as confident as males when investing, which in turn could reduce the risk of money loss by women. The reason for the respondents' choice could have had little to do with risk aversity but more to do with appeal in terms of van Tonder's (2006) view, which states that regardless of their choices, women prefer to be exposed to the same type of risk as their male counterparts, even though they find some types of investments more appealing than others do. However, the study of van Tonder (2006) was limited to single females and did not extend to married women.

Insurance policies are long-term and may be taken to reduce personal (and the employers') liability and obligations for loss of life, disability, trauma or injury purposes. Investments in insurance policies might have been an attempt to prevent future financial risk and may have therefore been considered as a risk averse option. The respondents were asked two questions relating to their objectives in having acquired insurance policies. The findings showed that the respondents did not prefer investments in insurance policies and that their personal objectives were not to meet, reduce or secure against liability or harm (for example, bank surety, professional third party claims, injury). The main reason for investing in certain policies was for future professional liability requirements.

Investments in pension funds are also long-term in nature and are to secure an income after retirement. Therefore investment in a pension fund may be regarded as

tool for long-term financial security and would be an appropriate choice for people that are risk averse, that is, for those that do not like taking chances. Most respondents preferred this type of investment, which indicated that a more risk averse strategy was preferred in the long term. This investment choice may have also been made to ensure income during retirement.

The objective of the respondents for investing in a pension fund was not based on personal choice but because of a requirement of their place of work. The results also indicated that men showed a greater degree of preference for pension funds. Based on the study of Holt and Laury (2002), the reason for the above difference in gender choice could be because as real incentives increases, so does the risk aversity for men and women, however, men are less risk averse in low-payoff decision.

In the questions relating to retirement annuities and pension funds, it was deduced that the students preferred a less risk averse strategy in terms of long-term retirement and pension planning, which choices were consistent with that of the need for shelter. The findings indicated that fewer of the respondents were uncertain (they chose options 5 and 6) in their choice of pension funds. This uncertainty may be attributed to students having not planned their future income strategies. The above inference could have been extended to the many females respondents who were indecisive (chose options 5 and 6) regarding the increase of their investments, as they grew older.

Fewer male respondents saw dependants and children as constraints in their ability to invest more money. The fact that the opinions of the female respondents were diverse and no pattern was apparent concerning their propensity to invest implied that the females did not know these answers as they were probably not the decision makers in their households and therefore could not readily answer such questions.

More of the respondents were willing to take risks in their investment strategies if their income had increased. Therefore, income was a constraint to the degree of risks taken in terms of investment strategies of the students. In terms of the approach of Maginn and Tuttle (1990), this could have been that the investment constraint due to financial liquidity was based on their real needs and not the perceived needs of the respondents. Another reason could be aligned to Kinetz (2004), who states that women view money differently than men do and to women money is about life and the difference that money can make in defining and achieving goals.

More of the respondents stated that they would have increased the number of their investments if they had got new jobs. Therefore, their jobs may have been a constraint to the number of investments held by the respondents. Contrasting the higher salaries of the professional female respondents to the salaries that were lower than ten thousand rand that are described in the study of van Tonder (2006), it may be stated that the respondents had enough money to buy financial products and services. Therefore the reason for their decision could be linked to the type of job that they did and not just to the amount of their income.

This would then be contrary to the view that a major investment constraint is that of liquidity. As 30% of the respondents chose options 5 and 6, indicating uncertainty in their responses, this could have meant that they had not given thought to their jobs as being constraints to the number of investments that they held.

Based on Strong (2004), the respondents who were indifferent in attitude, were risk neutral. More of the respondents would have increased the amount of their investments had their income doubled. Therefore, it is inferred that income was a constraint to the monetary amount of the investment. Based on a similar response to the other question related to money and investment, it is deduced that it was not just income that was a constraint, but the amount of income was also a constraint.

One of the factors that may have affected the outcome is found in the results of Jiannkoplos and Bernasek (1998), where it was found that participants' self-reported investment risk tolerance provides evidence that women also perceive themselves to be less inclined to risk taking. Overall the respondents were found to display a highly risk averse attitude. However, such attitude did not mean that the respondents were consistent in their individual attitude to risk for each question.

The above inconsistency also corroborates the theory by Brabazon (2000) on loss aversion, which suggests that investors are willing to take chances when trying to correct a losing situation or when trying to protect a gain. This study also corroborated the finding of Atkinson *et al.* (2003), in that where the respondents had similar knowledge, wealth constraints and position at work, there was little difference in their investment behaviour and choices. The findings also reinforce the view of Strong (2004) that virtually most investors only take risks when they expect to be rewarded for it.

This empirical study corroborates the findings of Maginn and Tuttle (1990:20) who found that age determines the level of risk the person is willing to take in different phases of life in that the respondents that were in the category of thirty years of age preferred to use brokers than rely on their own judgement, the overall objective of the respondents as they get older is to spend more on investments despite financial or any other constraints.

The patterns in the choices of the female respondents who were all professional women showed similar risk preferences to the choices of the male respondents. Whilst their overall attitude displayed risk aversity, the students who were professional females, also preferred some options with risks. This confirmed the results of Johnson *et al.* (2003), whose results were corroborated by Dwyer *et al.* (2002), that while women are generally more risk averse, an exception are female managers and professional women who have similar risk preferences to their male counterparts. Dwyer *et al.* (2002) also found that it is only the non-professional females that are more conservative in their investments, not the professional ones. However, this survey was limited to professional women.

## 5.5. Limitations of the study

The study was measured over a short period in time. To have measured the outcome more accurately, the variables should have been investigated at different stages, namely, prior to, during and post the investment making decisions. This would have allowed for greater understanding of and the reasons for the expectations, objectives, constraints, and preferences that affect risk aversity.

The study did not detail the reasons relating to the decision-making process and who was the decision-maker in each respondent household. It was difficult to discriminate between individual investor choice and the rationale for investment decisions. The fixed response questions were quick to answer and may therefore have drawn misleading conclusions because the respondent was not allowed the opportunity to qualify his or her responses (Wittse, 2006).

The information derived from the self-report data (for example, income) may have been distorted by the respondents to create a particular perception to the researcher about him or her (Leedy and Ormrod, 2004). The variables obtained from using the questionnaire as a measurement instrument may have had serious errors, as the variables were opinions of the respondents and not direct measurement of the data (Laiho *et al.*, 2006).

The study did not take into account the cultural, historic, religious, and traditional factors that affected the investment decisions of the investor (and hence risk aversity). The questions were of such nature that the participant might not have thought about the issue in question until the question was posed by the researcher. Therefore, the on-the-spot responses of the participants may have been influenced by a recent experience of the respondent or a current context of the issue (Leedy and Ormrod, 2004).

## 5.6. Conclusion

Based on an analysis, observation and interpretation of the responses, it was found that the UKZN MBA students were in fact highly risk averse. The responses showed the need for higher returns, the avoidance of making their own investment decisions by using brokers instead and the choice of more volatile investment vehicles, were indicative of low risk aversity.

Overall, the constraints of job security and income, the choice of stable investment vehicles, the expectation of earning consistent returns, securing funds for future liability or to compensate for potential future risk, and the need for long-term security were identified as being the factors that indicated that the respondents were highly risk averse in their investment strategies.

The examination of the gender differences and similarities in their investment strategies showed little difference in the choices and in the attitude towards risk of the male and female respondents. The T-tests confirmed that there were no significant disparities in the views and perceptions between the male and female respondents. The Alpha Cronbach results measuring 0,647, proved that the questionnaire variables had internal validity and reliability. These showed that the empirical research had therefore been able to measure and achieve the stated objectives of the study.

Possible reasons for investor risk aversion found in the literature review process were analysed to ascertain their applicability in light of the empirical findings. The findings of this study corroborates the results of previous research by Atkinson *et al.* (2003) and confirmed the research outcomes of Johnson *et al.* (2003) and Dwyer *et al.* (2002).

The following chapter will conclude the research and make recommendation for further studies on the topic.

*Chapter 6*

# 6. Conclusions and Recommendations

## 6.1. Conclusions

MBA students are a crucial part of the employment world as the students qualify to become senior management personnel in multinational companies or become entrepreneurs, generally making numerous investment related decisions for their own benefit or on behalf of others. This study was prompted by the academic gap of having only a minimal amount of research-based information relating to the investment preferences of both male and female MBA students, in light of their attitude towards risk.

More specifically no studies highlighting risk aversion and the factors that indicate risk aversity, that could assist brokers and people in intermediary positions (in, for example, the property, insurance and stockbroker industries) in understanding the needs of the UKZN MBA dissertation students, as investors, were found. It is hoped that this study will redress some of those information gaps and assist businesses in providing more informed and improved investment services and products offerings to the male and female students.

Accordingly, the study was undertaken to explore the extent to which the UKZN MBA dissertation students are risk averse in their investment strategies and whether there are any difference or similarities between the male and female respondents. It also attempted to identify factors indicative of their risk aversion. The specific questions that are asked of the respondents in the empirical research emanated from the aspects not dealt with in previous research relating to investment strategies and risk aversion. To achieve the study objectives, the empirical research entailed an examination of the objectives, expectations, preferences and constraints of the respondents concerning their investment strategies and attitudes towards risk.

The first objective of this study was to identify the factors that indicate that the students are risk averse. Therefore the questions that were posed to the respondents were carefully phrased so that the factors that indicate their risk aversion are clearly identifiable. The second objective of the study was to prove that the students are risk

averse. To achieve the second objective, closed-ended questions that directly asked the respondent whether he or she is risk averse was used to confirm whether or not the students are risk averse. The third objective was to determine if there are any differences in the attitudes of the male and female students in their investment strategies in terms of risk aversion. The third objective was achieved by comparing the results from objective one and objective two, in relation to the disparities in attitudes of the male and female respondents.

The findings prove that the UKZN MBA dissertation students are risk averse in that the respondents displayed attitudes of risk aversion at some stage of answering the questionnaire. The extent of risk aversion may increase or decrease depending on personal circumstances and the available investment choices. Irrespective of the population group and gender, there is little disparity in the attitudes of the male and female students. Male and female students are therefore similar in their approach to investment risk. Where disparities do exist, it is possibly attributable to the lack of investment knowledge or investing experience.

To the students, preference for household security by investing in immoveable property is most important, followed by the unknown chance of making a loss or profit on the stock exchange. Respondent income and jobs are constraints to higher investment amounts and the number of actual investments. The MBA dissertation students expect to earn higher returns once they complete their studies, hence their choice of volatile investment options.

When faced with an array of investment choices, the respondents' primary objective is to secure income during retirement rather than secure long term debt or avoid the risk of future loss. The respondents prefer not to take the risk of making their own investment choices. They are of the view that their potential for taking investments with increased levels of risk will not change if someone else (a broker) makes the investment decisions for them.

The choice of stable investment vehicles, the expectation of earning consistent returns, the need to secure funds for future liability or to compensate for potential future risk, the type of job, constraints of income and job security and the need for long-term security are also indicative of the extent of the students' risk aversity.

The results of a T-test based on gender perceptions is indicative that generally, the male and female students have similar perceptions and opinions regarding risk aversity and investment choices. The results of the Chronbach Alpha test confirm that the variables of the empirical research are valid and reliable, in that the findings were able to measure and to achieve the objectives for the research.

The empirical research corroborates the finding of Atkinson *et al.* (2003), in that where the respondents have similar knowledge, wealth constraints and position at work, there is little difference in their investment behaviour and choices. The observations confirm the results of Johnson *et al.* (2003), whose results were corroborated by Dwyer *et al.* (2002), that while women are generally more risk averse, an exception are female managers and professional women who have similar risk preferences to their male counterparts.

An assessment of the results of the empirical research confirms that the study was able to explore the statement of problems, meet the research objectives and answer the research questions. However, a limitation of the study is the lack of information relating to the decision-making process and who makes the investment decisions in the respondents' homes. Another limitation is that the study does not explore the preferences, constraints, objectives and expectations in relation to each of the numerous types of available investment products or the detailed personal circumstances leading to the investment decisions of the respondents.

## 6.2. Recommendations for future study

Sub-section 5.3, above, described the limitations of the empirical research. Based on the above-mentioned limitations, this section makes suggestions for future research. It is recommended that future research be undertaken across all of the accredited MBA institutions in South Africa. Such a study undertaken at a macro level will provide corroboration or varying results of the findings in the research conducted at a micro level. It is further recommended that the research be funded by government via an institution like the National Research Foundation ("NRF").

In light of ensuring more accurate results, it is suggested that future studies measure the study variables at different times, namely, prior to, during and post the investment decision-making stages. Future studies should also focus on the detail of the

reasons relating to the decision-making process and the identification of the decision maker in each respondent household.

In addition to this, a longer research timeline will allow for greater understanding of the discrimination in terms of investor choice and the reasons for the investment decisions (expectations, objectives, constraints, and preferences) that affect risk aversity. A further suggestion is that future studies investigate the cultural, historic, religious and traditional factors that affect the preferences and constraints of the investor (and hence risk aversity).

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# Index

# ADDENDA

**Annexure 1:**      **Permission to Conduct**

**Annexure 2:**      **Research instrument Research**

**Annexure 3:**      **Concept Matrix**

**Annexure 4:**      **Ethical Clearance**

**Investment strategies and related risk aversity of the Master of Business Administration ("MBA") students at the University of KwaZulu-Natal ("UKZN")**

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## Letter of informed consent

Date: 2006-10-19

**Dear Respondent**

**MBA Research Project**
**Researcher:** Lovina Nunan (0832225433)
**Supervisor:** Martin Challenor (031 260 8104)
**Graduate School of Business**
**University of KwaZulu-Natal**

We need your help to understand your feelings about investment strategies and risk aversity towards investments.

**Consent and Participation**
Although you do not have to complete the questionnaire because participation is voluntary, you will assist us greatly with your answers, which will only take a few moments

*Undertaking by Researcher*
The researcher undertakes to:-
    Honor the agreement that participants can withdraw at any given time, should they wish, without any negative or undesirable consequences to themselves
    Treat responses in a confidential manner
    Ensure anonymity where requested
    Provide the participants with copies of the survey results as benefits to them, should they choose to receive such
    Dispose of the collected data as soon as the MBA dissertation has been accepted and passed

**Consent**

I_____(please provide your name and surname)
hereby confirm that I understand the contents of this document and the nature of
the research project, and I hereby agree to participate in the research project, provided
that my personal identity or the identity of the organization for which I work are not
revealed in the final published research report.

I understand that I can withdraw from the project at any time, should I so desire.

Signature of participant _____

Date _____

Researcher:       Lovina Nunan        Telephone: 031 2077171        Questionnaire No:

Supervisor:       Martin Challenor        Telephone: 031 2608104

University of KwaZulu-Natal

Topic: "Investment strategies and related risk aversity of MBA students of the UKZN"

**Voluntary Questionnaire for UKZN MBA dissertation students**

Note to the respondent:

I require your assistance to understand the preferred investment strategies of MBA dissertation students in terms of their risk tolerance and degree of cautiousness.

Although I would like you to help me, you do not have to take part in this survey.

If you do not want to take part, just hand in the blank questionnaire at the end of the survey session or send a blank e-mail to the researcher.

What you say in this questionnaire will remain private and confidential.

**This questionnaire is to be completed as follows:**

1        Kindly answer the questions as truthfully as you can. Also, please be sure to read and follow the directions for each part. If you do not follow the directions, it will make it difficult for me to collate the information.

2        I am only asking you about things that you feel comfortable telling me about. If you don't feel comfortable answering a question, you can indicate that you do not want to answer it. Whether you choose to answer a question or not, your responses will be kept confidential.

3        You can mark each response by encircling each appropriate response with a PEN (not a pencil) or inserting the appropriate number into the box on the right,
except questions 6 & 7 where you may encircle all of the appropriate answers and question 8 where you need to insert the appropriate digits.
For those filling out the questionnaire online, please indicate you response in the box provided.

*Thank you very much for completing this questionnaire.*

Part 1:  Permission to use my responses for academic research

I hereby confirm that I understand the contents of this document and the nature of the research project. I grant permission that my responses to this questionnaire may be used for research purposes provided that my identity is not revealed in the published records of the research. I understand that I am at liberty to withdraw from the project at any time should I so desire.

Initials and surname:

Postal address:

E-mail address:

Date:                                                        Signature:
Cell:

I, the researcher hereby state that I shall not use the respondent's details for any other purpose other than the pupose of this study, in terms of the UKZN ethical code of conduct.

Researcher Signature:

Part 2: Your general personal particulars

Please tell me a little about yourself

Please mark only ONE option per question below, except for questions 6 and 8:

1     I am a:   (1) female       (2) male

2     I fall into the following age bracket:

     (1) 21-25      (2) 26-30      (3) 31-35      (4) 36-40      (5) 41-45
     (6) 46-50      (7) 51-55      (8) 56-60      (9) 61-65      (10) 65-70

3     I am undertaking a dissertation for the requirements of an MBA, at the UKZN Westville campus.
     (1) Yes      (2) No

4     I am a/an:

     (1) Black      (2) Coloured      (3) Indian      (4) White

5     Currently I am:

     (1) Unemployed                (2) Employed by the government
     (3) Employed by a corporate         (4) Employed in a family business
     (5) Retired                    (6) a consultant
     (7) self employed              (8) employed on a part time basis
     (9) a home executive           (10) a full time student

6     The **total** monthly net income to my **household** is approximately:

     (1) R0 - R10 000           (2) R11 000 - R15 000         (3) R16 000 - 20 000
     (4) R21 000 - 30 000        (5) R31 000 - 40 000        (6) greater than R100 000

Please encircle all of the appropriate sources of income for question 6, below.

7     My household monthly income is derived from the following:

     (1) salary      (2) private pension      (3) maintenance      (4) trust fund
     (5) dividends      (6) business profits      (7) inheritance      (8) government grant
     (9) other      (10) interest from a savings account held at a bank

Please insert the number of your dependents in words for question 8, below.

8     My household including me consists of:

     (1) _____ number of adults

     (2) _____ number of dependents

**Part 3: Information relating to your investment strategy**

Please tell me a little about your personal investments.

9     If I made my investment decisions on my own I would take greater risks.

| Very<br>likely | 1   2   3   4   5   6   7   8   9   10 | Very<br>Unlikely |

10    I would rather take the risk of investing on my own than trust an investment broker.

| I strongly<br>agree | 1   2   3   4   5   6   7   8   9   10 | I strongly<br>disagree |

11    It is likely that I would first invest in a government bond.

| Very<br>likely | 1   2   3   4   5   6   7   8   9   10 | Very<br>Unlikely |

12    I would rather invest in the shares of a private business than a public company.

| I strongly<br>agree | 1   2   3   4   5   6   7   8   9   10 | I strongly<br>disagree |

13    I would likely spend money on a guaranteed investment return than any blue chip share.

| Very<br>likely | 1   2   3   4   5   6   7   8   9   10 | Very<br>Unlikely |

14    I have an insurance policy only because it is required in order for my home loan to be granted.

| I strongly<br>agree | 1   2   3   4   5   6   7   8   9   10 | I strongly<br>disagree |

15    I have an insurance policy only because of my employer's employment policy.

| I strongly<br>agree | 1   2   3   4   5   6   7   8   9   10 | I strongly<br>disagree |

16    I would not invest in a pension fund if it were not compulsory at my place of work.

| I strongly<br>agree | 1   2   3   4   5   6   7   8   9   10 | I strongly<br>disagree |

17    How likely are you in investing in the property market?

| Most<br>likely | 1   2   3   4   5   6   7   8   9   10 | Most<br>Unlikely |

| 18 | How likely are you to invest in the stock exchange? | | |
|----|----|----|----|
| | Most Likely    1   2   3   4   5   6   7   8   9   10 | Most Unlikely | |
| 19 | I am likely to invest in retirement annuities? | | |
| | I strongly agree    1   2   3   4   5   6   7   8   9   10 | I strongly disagree | |
| 20 | I am likely to invest in unit trusts. | | |
| | Most Likely    1   2   3   4   5   6   7   8   9   10 | Most Unlikely | |
| 21 | As you get older are you going to spend more or less on your investments? | | |
| | Very much    1   2   3   4   5   6   7   8   9   10 | Very Little | |
| 22 | If I had more children or dependants my propensity to invest will increase. | | |
| | Very likely    1   2   3   4   5   6   7   8   9   10 | Very Unlikely | |
| 23 | To what degree are you scared to invest? | | |
| | Very much    1   2   3   4   5   6   7   8   9   10 | Very little | |
| 24 | If my income increased I would be less cautious in my investment strategy. | | |
| | I strongly agree    1   2   3   4   5   6   7   8   9   10 | I strongly disagree | |
| 25 | If I got a new job I would increase the number of my investments. | | |
| | Very likely    1   2   3   4   5   6   7   8   9   10 | Very Unlikely | |
| 26 | If my income doubled I would increase the amount of money I invest. | | |
| | Very likely    1   2   3   4   5   6   7   8   9   10 | Very Unlikely | |

*Thanks again for helping me with this survey.*

# Concept Matrix: Investment strategies and related risk aversity of the MBA students at the UKZN

| References \ Concepts | UKZN | MBA | Investment & Investors | Decision-Making /investing | Decision –making & risk taking | Risk, Risk Aversion Investments | Male / female investments | Research Methodology | Population and Sampling | Research Instrument | Questionnaire Construction | Variables | Quantitative & scales | Validity and Reliability | Data Administration | Statistics and Analysis | Gender Difference | Investment Types | Risk |
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**Concept Matrix: Investment strategies and related risk aversity of the MBA students at the UKZN**

| Reference | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
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**Concept Matrix: Investment strategies and related risk aversity of the MBA students at the UKZN**

| Reference | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
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## Concept Matrix: Investment strategies and related risk aversity of the MBA students at the UKZN

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**UNIVERSITY OF**
**KWAZULU-NATAL**

11 JANUARY 2007

**MS. L NUNAN (971163093)**
**GRADUATE SCHOOL OF BUSINESS**

Dear Ms. Nunan

**ETHICAL CLEARANCE APPROVAL NUMBER: HSS/06580A**

I wish to confirm that ethical clearance has been granted for the following project:

"The preferred investment strategies of UKZN MBA dissertation students. A heuristic study"

Yours faithfully

**MS. PHUMELELE XIMBA**
**RESEARCH OFFICE**

cc. Faculty Office (Christel Haddon)
cc. Supervisor (Mr. RM Challenor)