

**An analysis of the factors
influencing the risk
perception amongst
insurance policyholders
in Gauteng**

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requirements for the degree *Master of Commerce in
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DECLARATION

I declare that:

“An analysis of the factors influencing the risk perception amongst insurance policyholders in Gauteng”

Is my own work and all the sources I have used or quoted have been indicated and acknowledged by means of complete references, and that this thesis has not previously been submitted by me for a degree at any other university.



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Isaiah 41:10 “Fear not, for I am with you; Be not dismayed, for I am your God. I will strengthen you, Yes, I will help you, I will uphold you with My righteous right hand.”

ABSTRACT

Keywords: risk perception, insurance, demographics, behavioural finance, financial well-being, DOSPERT scale, risk tolerance, political-legal, crime, unemployment.

Individuals seek security and limit the risk of losing their possessions through purchasing an insurance cover and paying an insurance premium in exchange for the risk protection. The insurance industry is diverse in its entirety and includes, but is not limited to, property insurance, fire insurance, social insurance and medical insurance. The diversity is not only limited to the types of insurance cover but extends to the perceptions of the policyholders regarding risk. As a result, insurers tend to misunderstand the perceptions of the policyholders and inevitably lose clients. In South Africa, very little research has investigated the perceptions and attitudes expressed by insurance policyholders. Therefore, to bridge this gap, the purpose of this research study is to analyse the factors that influence the risk perception of insurance policyholders in Gauteng.

This research adopted a quantitative research methodology approach to address the primary objective, theoretical objectives and empirical objectives. The theoretical objectives focused on contextualising risk perception, identifying the current landscape as well as determining the insurance policyholders' behaviour towards risk through a contextualised theory from previous research studies. The target population is comprised of all South African insurance policyholders residing in Gauteng. Furthermore, this study followed a non-probability purposive method to meet the following criteria: living in Gauteng, older than 18 years, has an existing insurance policy and has some level of education.

Through this research journey, an exploratory factor analysis (EFA) statistical method was utilised to determine the factors for risk perception of insurance policyholders. Notably, endogenous factors relate to internal factors influencing the risk perception of insurance policyholders namely, demographics, risk tolerance, financial well-being and behavioural finance biases, while exogenous factors relate to external factors influencing the risk perception of insurance policyholders namely, political-legal, market fluctuations, crime and unemployment. However, demographics and risk tolerance were not incorporated as endogenous factors but, investigated separately due to their complexity. The results from this research study have indicated that risk perception is influenced by several factors. Interestingly, all the demographics, age, level of education, annual income, income variability, net worth,

household size, number of dependents, health status, financial knowledge, marital status, homeownership, employment status, type of policy and ethnicity except gender and religion were found to have an influence on the risk perception of the insurance policyholders.

Regarding risk tolerance, the majority of the participants indicated they would take average financial risks as most assets were covered but not comprehensively. Moreover, risk tolerance was influenced by the age and income level of the participants. Furthermore, endogenous and exogenous factors influence the risk perception of the insurance policyholders. The results showed a combination of both positive and negative relationships with risk perception. This study will further make a significant contribution to academia and the insurance industry by utilising empirical evidence to determine whether endogenous and exogenous factors influence the risk perception of insurance policyholders which many researchers have not incorporated in prior research studies. It will further provide deeper insight into policyholders' perceptions which will assist insurance companies in expanding their horizons and providing insurance services of higher quality to their clients.

Considering that insurers are not fully aware of their clients' risk perception, it causes a lack of commitment on the policyholders' side when buying an insurance cover. In addition, previous research studies have mainly focused on one type of insurance, motor vehicle insurance. This study will therefore significantly contribute to the insurance industry because it incorporates more than one type of insurance which were previously not incorporated by other researchers. The empirical findings of this research study will, furthermore, be of benefit to the insurance industry as it provides an analysis of the factors influencing the risk perception of the insurance policyholders. This can assist insurers to tailor insurance products accordingly for each policyholder in order to maximise customer satisfaction, especially in unprecedented market conditions. In turn, this will help insurers retain clients and realise higher profits. Additionally, retaining customers is a challenge commonly faced by insurers and can put insurers out of business. This research study will assist insurers in retaining clients and ultimately realise higher profits in the future.

During this research endeavour, the researcher experienced some limitations and recommendations were provided. Future researchers can expand on the sample size although this study met the sample adequacy as recommended by previous researchers. This research study considered the influence of demographics, risk tolerance, endogenous and exogenous factors on risk perception. Accordingly, future researchers should consider including more

variables such as the demand for insurance. Moreover, this research was performed amid the COVID-19 pandemic. It was recommended for future researchers, to perform a test pre and post COVID-19 to analyse the change in the risk perception of the policyholders. Lastly, it was recommended to include participants from varying geographical locations as this study considered participants from Gauteng only.

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LIST OF ABBREVIATIONS

ABSA	Amalgamated Banks of South Africa
AIG	American International Group
ANOVA	Analysis of variance
BIS	Bank for International Settlements
BSI	British Standards Institute
CFP	Consumer Financial Protection Bureau
DOSPRT	Domain-Specific Risk-Taking
ECB	European Central bank
EFA	Exploratory Factor Analysis
FA	Factor Analysis
FIAS	Financial Advisory and Intermediary Services
FSB	Financial Services Board
GDP	Gross Domestic Product
KMO	Kaiser-Myer-Olkin
KPMG	Klynveld Peat Marwick Goerdeler
LTIA	Long-term Insurance Act
OECD	Organisation for Economic Co-operation and Development
PWC	PricewaterhouseCoopers
SCF	Survey of consumer finance
SPSS	Statistical Package for Social Sciences
Stats SA	Statistics South Africa
STIA	Short-Term Insurance Act
TFC	Treating Customers Fairly
WHO	World Health Organisation

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

If the concept of risk can be compared to a bush of dry grass that may spark a fire at any given point, the concept of insurance can thus be compared to civilisation's fire extinguisher. The main concept of insurance has existed since the beginning of humanity. Whether it was going into the woods to hunt for a springbok, the risk of being ambushed to death by a lion existed; hence people have always been cautious of risk, highlighting how insurance emerged. In 1601, marine insurance, which goes a long way towards containing financial losses attributed to lost or damaged cargo, was the first type of insurance introduced in the history of insurance (Rejda *et al.*, 2017). Thereafter, fire insurance came into existence, followed by life insurance and liability insurance. To date, there are seven types of insurance, including property insurance, social insurance, and guarantee insurance. Historically, insurance was considered a formal and protective way of distributing risk amongst people considered to be at risk of losing a certain item or property. Similarly, it is now considered as a form of financing directed to a policyholder's desired assets that need to be protected from future related risks that may occur (Bellando, 2016:33).

The world is full of risks and uncertainties that people try to mitigate and avoid from their daily lives. Insurance, therefore, serves as a financial device that saves those who suffer from misfortunes. Gurung (2001) further describes insurance as the best means by which one can spare human life, property and liability from various risks. Moreover, the premiums paid by an insurance policyholder is dependent on the insured's willingness to pay and how 'at risk' they deem their property to be (PWC, 2015:6). Without insurance in our society, various kinds of risks are bound to erupt, such as death, fire, accident and theft (Ibrahim, 2008). This highlights how important insurance is in human life for both businesses and individuals.

In addition, individuals seem to always have a way to find a solution to mitigate risks and taking out insurance is one of them. According to Ibrahim (2008), insurance policies have tried to mitigate and, in some cases, totally avoid social evils, such as theft and unemployment, which are a common enemy to every economy. Although, in most cases, people opt for insurance due to the value they put on their property or lives. Nonetheless, others solely do not believe that uncertainties can occur. Moreover, Gurung (2001) highlights that the living standards of an individual with insurance increase it may increase awareness of people in

protecting their properties and lives. Therefore, if the uncertainties occur, the effects may be detrimental to an individual's standard of living.

Notably, risk is at the centre of insurance and its policyholders' choices, and undoubtedly, nowadays, people are getting more interested in securing their possessions through insurance (Rejda, 2017). These possessions can be in the form of a car, house, phone etc. According to Manez *et al.* (2018), 'risk' is a popular term that has existed since the beginning of humanity, and it is a part of everyday life for both businesses and individuals. Bubeck *et al.* (2012) highlighted the impossibility of escaping all types of risk in today's world. To support this view, Crane *et al.* (2013:258) highlight that some level of risk is involved in everyday life for individuals with a car, house or bonds and even jogging alongside a moving truck on the road involves. Therefore, risk needs to be managed in some way for individuals to feel that their possessions or lives are secured (Rejda, 2017). This brings the term risk management into light which most people tend to believe simply involves buying insurance.

In a study conducted by Du Toit and Vivian (1995), when people manage their risk, their choices are largely influenced by how they perceive the risk involved. A follower of behavioural economic theories, Herbert (1956: 129-138), found that it is human nature to act to the point where one feels satisfied with the decision taken in terms of the psychological and social environment in which they function. This view can be supported by a hypothetical example where buyer A and buyer B both engage in buying a house. Buyer A may see it as a risky investment and opt for full insurance cover, while buyer B will be satisfied to live in the house with little or no cover from an insurance company. Although the risk of theft, fire or water damage exists, both buyers are on polar ends of how they perceive risk. This was supported by a study conducted by Paul and Peters (2006:355), which found that different insurance policyholders do not view risk in the same light.

Similarly, risk tolerance is essentially the amount of risks individuals are willing to accept in their financial planning. This differs from person to person and tends to influence how one perceives risk (Davies & Brooks, 2014). For example, Ricciardi and Rice (2014) highlight that individuals with low-risk tolerance can only accept a small amount of risk and are likely to take insurance on most of their possessions. On the other hand, an individual with high risk tolerance can go for as long as a month driving and living in a house without a car or house insurance (Roszkowski & Davey, 2010:44). Both these individuals have different levels of the risks they are willing to take.

In addition, it is evident that risk and perception are inseparable twins, which make the term risk perception. In reference to Moen *et al.* (2004:665), the term risk perception is, therefore, a general term describing a subjective judgment made by an individual on the severity of a risk involved. The determinants of risk perception are important in assessing the risk perception of individuals. Firstly, previous studies by Sund *et al.* (2017:99), Balaji (2017:257) and Dickason and Ferreira (2018:10851) highlight that demographics which include an individual's age, health, income, and educational level, may influence a person's risk perception. Secondly, risk perception may also be influenced by internal factors such as financial well-being, risk tolerance which refers to the risk one is willing to withstand (Davies & Brooks, 2014). In addition, Ricciardi and Simon (2000:75) highlight that behavioural finance biases that are irrational behaviours that can unconsciously influence an individual's decision-making process are also an endogenous factor influencing an individual's risk perception. Thirdly, changes to the external environment such as market fluctuations, political instability and global pandemics may also influence one's risk perception. Lastly, economic theory highlights that risk is always clearly perceived (Sargent & Wallace, 1974).

With the increasing importance of insurance in this century, the Department of Presidency (2018:355) mentioned that in keeping the desired living standards, many South Africans, particularly in Gauteng, safeguard their belongings in the form of insurance. Although seen in this light, it is difficult to accept the negative effects of an unwanted event; however, some people have insurance while others still do not. Nonetheless, the question of whether insurance policyholders feel more at risk now than they were years ago still goes unanswered. Moreover, as crime rates and unemployment rates are increasing and the risk of falling victim to theft, fires, market disruptions and other unforeseen events is heightened, evidence is still required indicating whether insurance policyholders perceive risk in the same light or not.

According to classical economic theory and principles of an efficient market, consumers tend to have full information. The risk is perceived, and each individual pays an insurance amount that maximizes his expected utility (Sargent & Wallace, 1974). This view is supported by a study conducted by Kunreuther and Pauly (2004:5) which states that an individual who is risk-averse will pay a greater premium for insurance. The first form of insurance highlighted that insurance policyholders need to be aware of the factors that influence their insurance policy to avoid making uninformed decisions. Hence, understanding how one perceives risk and how behavioural finance biases influence them will help both the insurer and the insured make rational financial decisions (Mishra, 2004). With success in understanding how insurance

policyholders perceive risk, Buzatu (2013: 33) states that the insurer can ensure client satisfaction, increase brand loyalty, and promote good word-of-mouth. Hence, incorporating the risk perception of policyholders with their categorised behavioural finance biases will most likely provide a good relationship between the two parties involved. As such, it is essential for insurance companies to conduct thorough research on how their clients perceive a risk to better understand the emotional state that their policyholders could possibly be facing during a certain insurance period (Butt *et al.*, 2015). Additionally, Butt *et al.* (2015) state that it has been concluded that the risk perception of insurance holders is often used as the mediator among cognitive biases when taking out an insurance cover.

Moreover, high crime rates, unemployment rates and political unrest put people at higher risk of losing their belongings if they are not insured. Nonetheless, in order for insurance companies to improve their variety and client base, they need to understand how their clients think and feel about their product (Buzatu, 2013). Gauteng is the most populous province in South Africa, with many people safeguarding their belongings in the form of insurance. A study by General Household Survey (2017) revealed that the most urbanised provinces constitute many people who are insured at an insurance company. Therefore, with Gauteng being the most urbanised province in South Africa, conducting this study with the target population residing in the province became significant.

Although less than 17 per cent of households in South Africa have medical aid and only 30 per cent of the cars are insured, with Gauteng being the most urbanised province with 15 million people, it constitutes a larger portion of the 17 per cent and 30 per cent of the insured cars (StatsSA, 2019). Additionally, South Africa is one of the most insured societies globally, where more than 35 per cent of Gross Domestic Product (GDP) is spent only on insurance (FinMarkTrust, 2019). Considering that, not much research has been done on the risk perception of policyholders living in Gauteng. The purpose of this study is to, therefore, analyse the risk perception of insurance policyholders in Gauteng. This will allow insurance companies to better understand their clients and insurance policyholders and have better insight into their financial knowledge and make better insurance decisions as they will be well aware of the rationality of the policyholders' decision-making.

1.2 THE PROBLEM STATEMENT

Risk is an integral part of life. However, a study conducted by Gurung (2016) highlights that people who do not need protection from insurance still buy the insurance for other risks to

which they may not be exposed to as protection against future uncertainty. This situation shows that insurance policyholders may still feel exposed to risk and resort to buying insurance. While an uninsured property owner may be risk aggressive some owners may be concerned about fires and theft and choose insurance with a high price (premium) to protect themselves against the underlying risks (Mishra, 2004). There are several reasons why insurance policyholders may not perceive risk as that prescribed by the classical theory (Buzatu, 2013:34). Firstly, people may not process information in a classical assumed way due to factors such as age, health, income, education level, and financial knowledge. Secondly, other factors such as behavioural finance biases, financial well-being, risk tolerance and taking behaviour may also influence how a policyholder perceives risk. In addition, endogenous factors such as political ills, global pandemics, crime and unemployment levels may also influence an insurance policyholder's perception of risk.

Moreover, factors such as age and a person's income also influence an individual's risk perception and how they tolerate risk. The literature supports that an individual's financial well-being, which refers to one's financial security and having a sense of financial freedom, significantly impacts how a person perceives risk (Bruggen *et al.*, 2017:228). A study by Alamur *et al.* (2018) suggests that good financial well-being results in an individual setting aside a significant portion of their income towards securing their possessions. In addition, an individual's irrational behaviours can unconsciously influence one decision-making process, which further links to how one perceives risk (Ricciardi & Simon, 2000:75). The influence of the economic and political landscape on the risk perception of insurance policyholders was achieved by providing certain economic and political events in South Africa and identifying how individuals' perceptions differ during certain periods. The problem with not taking both endogenous and exogenous factors that may influence risk perception into account is that it may lead to actions that may affect the business of insurance. Therefore, to understand how policyholders perceive risk several factors have to be taken into account to help the insurer tailor insurance accordingly.

1.3 OBJECTIVES OF THE STUDY

The following objectives have been identified and outlined for the study:

1.3.1 Primary objective

The primary objective of this study is to investigate the factors influencing the risk perception amongst insurance policyholders in Gauteng.

1.3.2 Theoretical objectives

In order to achieve the primary objective of the study, the following theoretical objectives have been identified:

- Contextualising risk perception;
- Identifying the current economic and political landscape in Gauteng; and
- Establishing a theoretical link between risk perception of insurance policyholders and their behaviour towards risk.

1.3.3 Empirical objectives

In accordance with the primary objective, the following empirical objectives are formulated:

- Determine how demographical factors influence the risk identification and risk perception of insurance policyholders;
- Determine the relationship of risk tolerance on risk perception of insurance policyholders;
- Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng; and
- Identifying the exogenous factors that influence risk perception of insurance policyholders in Gauteng.

The empirical objectives above formed a fundamental part of this study because studies conducted by Balaji (2017), Sund *et al.* (2017:99), Dickason (2017:216) and Abass (2018:288) found that there is a difference in the amount of risk that participants are willing to take based on their demographical factors, risk tolerance, endogenous and exogenous factors.

1.4 RESEARCH DESIGN AND METHODOLOGY

This study comprised a literature review and an empirical study that intends to explain the research design and methodology employed in the study. This study comprised a quantitative research approach where an online questionnaire was distributed and completed by those willing to participate. Observations should be quantifiable, and the use of scientific methods yields universalised answers, while positivistic researchers believe that the knowledge gained through direct observation is more realistic, trustworthy and factual (Hammersley, 2013:22). Thus, a positivistic research paradigm was followed where the researcher analysed completed questionnaires from individuals to acquire a trustworthy understanding of the phenomena in question (Pham, 2018). The following section constitutes a literature review and an outline of the methodology subsections of the empirical study.

1.4.1 Literature review

The literature review focused on analysing the influence the behavioural finance and the current landscape in South Africa on the risk perception of insurance policyholders in Gauteng. Previous studies and theoretical theories on the endogenous and exogenous factors influencing the risk perception of insurance policyholders were also outlined. This study's literature review and the theoretical background was compiled by accessing books, newspapers, journal articles, websites, and magazine articles to further analyse the factors influencing risk perception amongst insurance policyholders.

1.4.2 Empirical study

The empirical portion of this study comprises the following methodological subsections:

1.4.2.1 Target population

A target population must be selected carefully since researchers make inferences regarding the whole population based on a selected sample. Upon selecting the target population, the population parameters need to be set (Quinlan, 2011:206). The target population for this study comprises South African insurance policyholders situated in the Gauteng province.

1.4.2.2 Sample size and sample method

The study comprised insurance policyholders who are permanently based in Gauteng, ideally a sample of 350 Gauteng residents. This number was chosen because not much research has been done about the insurance industry using primary data. Kunle *et al.* (2018:285-290), Abass (2018), and State of California Department of Insurance (2018) are some of the researchers who combined a sample of 305, 350 and 300, respectively, respondents to determine the effects of risk perception on the demand for insurance. Therefore, although Gauteng has a large population, a sample of 350 respondents was used. The characteristics of this sample are categorised as follows:

- Older than 18 years;
- Has been covered by insurance for more than 2 years;
- Is insured at an insurance company in Gauteng; and
- Educated enough to read and answer questions.

In this study, purposeful sampling was used to filter insurers who are above 18, insured by any insurance company in South Africa, residing in Gauteng, and has some level of education. Comrey and Lee (1992) generated a rough rating scale for adequate sample sizes in factor analysis: 100 = poor, 200 = fair, 300 = good and 500 or more = very good. In support,

MacCallum and Widaman (1999) suggested that researchers should obtain samples of 300 or more observations whenever possible in factor analytic studies for good and meaningful results.

In addition, in a study that employs factor analysis, it is recommended that a ratio with at least five items is required (Malhortra & Birks, 1999:120). In this study, the sample (348) yielded a ratio of six items for each variable. Hence the sample size of this study included 350 insurance policyholders in Gauteng, which meets the requirements for the statistical analysis employed in the study.

1.4.2.3 Data collection method and measuring instrument

The researcher utilised the snowball sampling method in this study. According to Kamarudin (2013), the snowball sampling method can be defined as a non-probability sampling method in which existing respondents provide referrals to recruit more samples that meet the criteria to participate in the study. Since the questionnaire was administered online utilising snowball sampling, the researcher utilised the Risk Management Facebook page, emails, LinkedIn, and WhatsApp. A link was distributed to 30 initial respondents who form part of the target population. The initial respondents were asked to share the questionnaire link with similar individuals through the same social media platforms. Participation was strictly voluntary, and the participants were asked not to leave any identifying marks on the questionnaire.

The questionnaire was only be distributed electronically to the participants due to COVID-19. The questionnaire firstly outlined the importance of the study and the participation of the participants. The questionnaire consisted of the following sections: (A) demographic information, (B) financial well-being, (C) behavioural finance biases, (D) risk identification, (E) risk perception scale including the risk tolerance scale and (F) external or international events. It is important to note that endogenous factors refer to internal factors influencing the risk perception of insurance policyholders namely, financial well-being and behavioural finance biases. On the other hand, exogenous factors refer to external factors influencing the risk perception of insurance policyholders namely, political-legal, market fluctuations, crime and unemployment.

The first section, Section A, comprised various demographic factors such as age, gender, ethnicity, the highest level of education, and the insurance policyholders' annual income. The demographics mentioned above were used because previous studies have found a difference in the amount of risk participants are willing to take based on their demographics (Dickason &

Ferreira, 2018:10851), (Balaji, 2017). Moreover, demographical questions will consist of age, gender, race, marital status, employment status, level of education and annual income.

Similarly, Rossini and Maree (2005:45) proposed that socio-cultural questions include religious beliefs, financial awareness and health awareness as utilised in this study. In addition, studies by Yao *et al.* (2011:883), Sund *et al.* (2017:99), Dickason (2017:216) and Abass (2018:288) found that demographic factors are an important part of research as they influence an individual's risk perception. Seeing that most studies have focused on the influence of demographics on risk perception, several studies by Hammitt *et al.* (2009:130); Yao *et al.* (2011:885); Dohmen *et al.* (2011); Outreville (2013), Noussair *et al.* (2012), and Kumar (2016) also established certain socio-cultural factors to have a significant influence on the risk tolerance and risk perception of individuals.

Leon and Pfeifer (2013) further highlighted that individual religious beliefs are a significant determinant of the willingness to take risks as it shapes one's norms and values. In addition, having a religious involvement is associated with higher risk aversion in individuals (Dohmen *et al.*, 2011). The study by Leon and Pfeifer (2013) found that, in a general sense, Christian religions are less risk-tolerant, and the same holds for Muslims, Buddhists, Hindus, and Jews. Therefore, individuals with a religious affiliation are more risk-averse than individuals who are not religiously affiliated (Renneboog & Spaenjers, 2012; Noussair *et al.*, 2012).

According to Kumar (2016), understanding the effects of health on risk perception is important for understanding a wide range of financial decisions. Interestingly, poor health exhibits a decrease in risk aversion (Kumar, 2016). Key findings in a study conducted by Outreville (2013:158) highlight that people with poor health are less risk-tolerant than people who are relatively in good health. Therefore, it is of high importance to incorporate demographical and socio-cultural factors as they will form an integral part of the study.

Section B consists of financial well-being, where individuals are asked to indicate the level of financial risk they are willing to take. This approach enabled the researcher to obtain a thorough understanding of the risk tolerance of the insurance policyholders and their behaviour towards financial risk during certain financial risk events, which was done through a compilation of questions.

Section C consists of behavioural finance biases consisting of psychological statements that will help predict how insurance policyholders base their financial decisions. According to

Byrne and Utkus (2000), the significance of behavioural finance biases questions is to assist in understanding why individuals make specific financial choices. This is because individuals are not always rational but rather influenced by some psychological factor causing them to make certain choices (Das & Panja, 2019). Therefore, additional behavioural finance biases will generate an integral part to analyse the internal factors affecting the risk perception of insurance policyholders.

Section D further investigates how people identify and define risk and insurance risk, which will indicate what insurance policyholders think risk is. This is an important section in this study because people's understanding of risk influences their decision-making, which relates to how they perceive risk. Research by Manez *et al.* (2018:53) indicated that effective communication about risk needs to be considered in order to understand people's perceptions of risk.

Section E consists of the risk perception scale that used the Domain-Specific Risk-Taking (DOSPERT) scale, indicating how insurance policyholders perceive the risk involved in taking out insurance. Weber *et al.* (2002) developed this scale and highlighted that it is significant in research because individuals can score differently on the psychological risk dimensions. Moreover, it allows researchers to assess both conventional risk attitudes and perceived risk attitudes in different domains (Blais & Weber, 2006). This section also incorporated the relationship of risk tolerance on risk perception of insurance policyholders.

Section F consisted of international events occurring in the external environment, such as political-legal and global pandemics, affecting the insurance policyholder's perception of risk. In order to achieve this, the insurance policyholders were required to indicate the likelihood that their risk perception was influenced and was measured on a six-point Likert scale, the following mapping exists; (1 = very unlikely, 6 = very likely) or (1 = strongly disagree, 6 = strongly agree). Moreover, the external environment was a significant section in this study to analyse the effect of external events on the risk perception of the insurance policyholders' risk perception.

Notably, the Likert scale, a psychometric response scale used to measure perceptions and attitudes, has been utilised throughout the questionnaire to assess an individual's perception and attitude towards various statements (Joshi *et al.*, 2015). The responses were measured on a six-point scale as established above. Due to COVID-19, a global pandemic, certain restrictions have been put in place by the government. On 26 March 2020, the government put

the first national lockdown into effect to curb the spread of the virus. Therefore, the participants completed the questionnaire online to limit physical contact, and no hard copies were issued. Moreover, this study will use QuestionPro to construct a structured online questionnaire and collect the responses.

1.4.3 Statistical analysis

The study utilised the following statistical methods to capture data:

The first statistical measurement was descriptive statistics, which Holcomb (2016:14) describes as a tool summarising a collection of quantitative information gathered from a sample or a population. In this study, frequencies, range, mode, mean, and standard deviations was used. Cross-tabulation is the second statistical measure used, and it addressed several relationships between several variables (Neelankavil, 2015:274). As such, it determined the correlations between the behavioural finance of insurance policyholders and their risk perception. The third tool used was correlations through the use of a simple correlation coefficient. According to Boslaugh (2012:173), the correlation coefficient measures the linear association between two variables. The DOSPERT and SCF scales were also utilised in this study. The scales were measured through a regression and an Analysis of Variance (ANOVA), which indicates the variation of the likelihood of how endogenous and exogenous factors influence insurers.

The following regression formula was utilised in the study:

$$Y_i = f(X_i, \beta) + e_i$$

Where,

Y_i = dependent variable (DOSPERT scale)

f = function

X_i = independent variable (Demographics, risk tolerance, endogenous factors and exogenous factors)

β = unknown parameters

e_i = error terms

1.5 CONTRIBUTION OF THE STUDY

The insurance industry is highly dependent on its clients for its daily operations and understanding the impact of their clients' risk perceptions is vital for the industry. Moreover, much research has aimed at analysing the risk perceptions of insurance policyholders, mainly for motor vehicle insurance. With very limited research on the insurance industry as a whole, this study will provide a meaningful contribution to the insurance industry by looking at more than one type of insurance. In addition, previous studies have focused on using scientific methods which provide a more generalised analysis of the risk perception of insurance policyholders. This study utilised primary data in the form of a questionnaire found by Hammersley (2013:22) to provide more factual and trustworthy results when researching.

This study will significantly contribute to academia and the insurance industry by utilising empirical evidence to determine whether behavioural finance perspectives influence the risk perception of insurance policyholders. It will also assist in acquiring a better understanding of whether insurance policyholders' perception is affected by endogenous and exogenous factors which many researchers have not incorporated in prior research studies. It will further provide insight into South African policyholders' perceptions which will assist insurance companies in expanding their horizons and providing a better insurance service to their clients.

On the condition that the influence of endogenous and exogenous factors on insurance policyholders' risk perception is significant, it will be important for insurers to take these factors into account when assessing their policyholders' behaviours.

1.6 ETHICAL CONSIDERATIONS

This study was conducted following the North-West University ethical guidelines and principles (NWU, 2016:15). The participants' responses were treated confidentially at all times. To ensure anonymity, the participants were instructed not to include their details or their names or any identifying markers in the online questionnaire. The participants were not obliged to partake in the study as their participation in the study is strictly voluntary, and participants are free to decline participation. Moreover, for the purpose of this study, only primary data were used. The responses provided by the participants were treated as highly confidential, and only the researcher had access to their information. In addition, no questionnaires were distributed to vulnerable persons.

1.7 CHAPTER CLASSIFICATIONS

This study consists of the following chapters:

Chapter 1: Introduction and background

The study started by introducing a brief background on risk perception and internal and external factors influencing risk perception. Then, the objectives, as well as research design and methodology, were discussed.

Chapter 2 and 3: Literature review

A literature review on risk perception and risk tolerance was provided. In addition, the insurance market was discussed based on previous studies and empirical studies in this sector and factors influencing this industry. Previous studies on factors influencing the risk perception of insurance policyholders were also reviewed.

Chapter 4: Research design and methodology

Theoretical research in the literature review was conducted. This research utilised a self-structured questionnaire where the questionnaires were only distributed electronically. Chapter 4 further provided an outline of the process employed to achieve the empirical objectives.

Chapter 5: Statistical analysis and discussion of results

The results obtained from the questionnaire about the risk perceptions of insurance policyholders were statistically tested through descriptive statistics, cross-tabulations, correlations, ANOVA and factor analysis. The results were analysed and interpreted to indicate possible outcomes.

Chapter 6: Conclusion

The study further concluded on the results obtained about Gauteng insurance policyholders' risk perception. Furthermore, it highlighted the study's limitations to provide recommendations for future researchers who wish to study the subject matter.

CHAPTER 2: THE CLIMATE OF THE SOUTH AFRICAN INSURANCE INDUSTRY OVERVIEW

2.1 INTRODUCTION

According to Vivian (2007), the insurance sector has significantly evolved over the years. Schich (2009) alluded that changes have occurred globally since its first introduction in the 1600s. The initial introduction of insurance only saw local and regional carriers writing life and fire insurance, which caused them to be widely popular in the industry. Henceforth, the industry has grown substantially in terms of the number of insurance products and buyers of insurance, policyholders (Binder & MuBhoff, 2016). Since its existence, various companies have populated and prospered in the insurance industry offering differing insurance products and insurance policyholders who protect their possessions due to economic pressures. Over time a wide range of insurance services has become readily available through technology, reflecting the change in buyer needs and preferences for insurance (PwC, 2020).

The South African insurance market has had no major catastrophic events from 2010 to 2016, except the severe drought that affected farmers in 2015 (PWC, 2016). Moreover, flooding has caused damage to crops and agricultural infrastructure, which has cost farmers in South Africa (Tom, 2021). This has resulted in lower premiums as they did not plant enough crops which resulted in fewer claims and refunds of premiums. Moreover, the downgrade in a credit rating affects growth in premiums going forward (FitchRatings, 2020). In addition, COVID-19 has led to higher unemployment rates which inevitably lead to high crime rates, further inhibiting economic growth (United Nations Office on Drugs and Crime, 2020). The effect is that insurance policyholders will be inclined to seek affordable insurance solutions. This will further impact insurers if they fail to make their products more efficient. It is thus of paramount importance that South African insurers remain competitive to retain their policyholders due to the premiums becoming unaffordable (PwC, 2020).

Overall, this chapter defines what risk is and provides an in-depth discussion of the insurance industry and the challenges that this industry faces. A study conducted by Best (2019) explains how insurance is sold. This includes the different channels that are involved in the sale of insurance. To shape the study, Chapter 2 provides an analysis of how insurance companies are currently performing in South Africa based on the evidence collected from the Global Competitiveness Report (2019). Moreover, the insurance industry plays a fundamental role in

every economy, which Dickinson (1998), ECB (2009) and the World Bank (2020) identified as savings and investment intermediary, promoting financial stability among households and firms, and risk protection, respectively. Patel (2019) shaped the study through a discussion of the principles that shape the insurance industry as well as the challenges faced by the industry, which were pointed out in studies conducted by Viscusi (2006); Rocheteau (2006); Sottillotta (2012); MiWay (2019); PwC (2020); Kalinda (2020); Deloitte (2020) and Ndlela (2020) over the years. Lastly, this chapter discusses the regulation of the insurance industry with two important Acts.

2.2 DEFINING RISK

Risk is a word with various meanings to various people in a society and can be defined in different ways (Adams, 2014). Risk forms part of every human endeavour (Damodaran, 2008). From the moment one gets out of bed, takes a bath, drives to work and until they get back to bed, they are exposed to several degrees of risk. In a general sense, Outreville (1998) defined risk as the possibility of an event going wrong. In a broader view, risk refers to the uncertainty of the outcome of an event (Singh, 2009). Uncertainty means not knowing what will happen in the future; hence, the greater the uncertainty of an outcome, the greater the risk. Finucane *et al.* (2000:17), Elmiger and Kim (2003) and Crane *et al.* (2013) held the same definition of risk and further elaborated that it is a function of profit or loss. Brown (2014) elaborates that risk is created by the difference between the way that experts and the public think about risk. Gurung (2016), a scientist, defined risk as a hazard multiplied by exposure equating to a consequence. On the other hand, a regular person in the street defined it as the likelihood of something going bad. Figure 2.1 provides a graphical definition of risk.

Figure 2. 1: Graphical definition of risk



Source: Author compilation

From these definitions, it is evident that there cannot be a single definitive answer describing what risk is. However, risk practitioners Hillson and Webster (2005) highlighted that the term risk only sees the downside of an outcome. The British Standards Institute (BSI) (2018) echoes this general view which states that risk is the uncertainty that can affect the achievement of goals. In our society, risks such as death, robbery, fire, and accidents occur (Hillson & Webster, 2005). These incidents can have a detrimental loss to individuals because people do not have certainty over when and how they occur. This lack of certainty is what has been defined as a risk (Singh, 2009).

There is undoubtedly a distinction between the risk of losing money from an investment and the risk of being hit by a moving truck while jogging next to it (Crane *et al.*, 2013:258). The difference leads to a classification of risk into speculative and pure risks. Speculative risk refers

to the family of risks in which some possible outcomes are beneficial (Fitzherbert, 2003). In other words, a speculative risk is a situation that might also end in gain. In contrast, pure risk accompanies only the possibility of a loss, with no possible outcomes of gain (Alwang et al., 2005). Therefore, pure risk and speculative risk will be discussed in the following section.

2.2.1 Speculative risk

According to PricewaterhouseCoopers (PwC) (2019), speculative risk involves the possibility of a gain or a loss. This type of risk is more common in business enterprises. Shiller (2014:1486) gives an example that if one decides to venture into a new business, there is a possibility of gain if the business is successful, and a possibility of sustaining a loss occurs if the business is unsuccessful. For example, if an individual buys shares in a company, the prospects of making a gain occur if the shares rise in the stock market, and a loss will occur if the shares fall in the stock market (Wang & Wen, 2012:184). Similarly, gambling is another example of speculative risk. It involves the expectation of either making a gain or sustaining a loss (Arthur Williams, 1966:577). If a person engages in sports betting with R800, the outcome of the match faces both be the possibility of loss or gain, which makes it difficult to ensure speculative risk. Contrary to speculative risk is a pure risk.

2.2.2 Pure risk

Simsek (2013:1365) highlighted that a pure risk involves a situation of a possible loss or no loss. This means that if you go to work in your car, you cannot be certain whether you will be involved in an accident or not. For example, your car may run into someone's property or injure someone walking in close proximity. Similarly, when you buy a phone, you face the prospect of the phone being stolen or not being stolen; that is, there is the uncertainty of loss (Wang & Wen, 2012:185). When involved in the situations above, you will suffer a loss. However, if you return home without being involved in an accident and with the phone not stolen, you will suffer no loss. Therefore, in pure risk, only two possible outcomes occur which are, loss or no loss. Under pure risk, there exists a possibility of gain or benefit. Calder (2017) supported this view by stating that you derive no gain from your house not being burnt down or your phone not being stolen. This means that only pure risk can be insured (Calder, 2017).

2.3 RISK RESPONSES

According to Outreville (1998), in response to a need for protection against the risk of losses, the insurance industry emerged. This means that an individual can shift the financial risks to

an insurance company as a response to exposure. Primarily, insurance is a form of risk management used to hedge against the uncertainty of a loss (Kendrick, 2009). Generally, people have a misconception of what risk management is as they tend to view it as simply buying insurance. However, several risks that an insurance company cannot insure can be catered for by several risk responses. The following section explains:

2.3.1 Risk avoidance

Risk-taking or its inverse, risk avoidance, is frequently mentioned by risk practitioners. According to Gatzert *et al.* (2016:641), risk avoidance refers to the complete elimination of activities or decisions that may cause harm or negatively affect one's financial assets. In a similar vein, Shahzad (2010) defined it as an informed decision not to be involved in or to withdraw from activity to not be exposed to a particular risk. Risk avoidance is also considered the most effective way to prevent risks because risk is completely avoided (Dinu, 2013). Also, Wang and Wen (2012:185) highlighted that an individual could avoid the risk of getting involved in a car accident by simply not driving the car. Similarly, an individual would avoid the risk of losing their phone while jogging by leaving it at home. This risk response is ideal for risks that tend to cause a severe impact on a project or business (Antonites & Wordsworth, 2009:69).

2.3.2 Risk mitigation

Virdi (2005) stated that risk could not be avoided altogether; however, it can be mitigated. Risk mitigation or risk reduction refers to the minimisation of activities that may be harmful to one's health or possessions or lead to a major loss (Gatzert *et al.*, 2016:642). It is the most common way most businesses choose to deal with their risks (Ward, 2001:7). It is important to also emphasise that reducing risk is not entirely sufficient in managing risks as it minimises the risks, not eliminates them (Rao & Metts, 2003). This approach is established on the fundamental principle that action taken to reduce harmful risks is more effective than fixing damages after the risk occurs. According to Lai (2014), individuals can reduce the amount of damage or losses certain risks can have. This can be achieved by incorporating specific adjustments to the life of an individual. Harner (2011:470) further elaborated, stating that the risk of getting injured in an accident can be mitigated by wearing a seatbelt in a car.

2.3.3 Risk assumption

According to LiPuma and Lee (2004), risk assumption is a risk management technique generally referred to as risk acceptance or self-insurance. Aiuppa (2001:16) further defines self-insurance as the act of establishing a monetary fund that can be used to cover the loss caused by a risky event. Moreover, risk assumption can be defined as a situation whereby an individual or business would predict the likelihood that losses or a threat could occur but takes action to protect against these losses (Besar *et al.*, 2011). Several researchers, Repullo (2005:47), Olsson and Spejelkavik (2014:197), refer to risk assumption as a last resort. This means that risks cannot be avoided or mitigated but accepted or assumed. According to Ahmed *et al.* (2007), accepting risk means simply dealing with the consequences that come with the risks.

2.3.4 Risk shifting

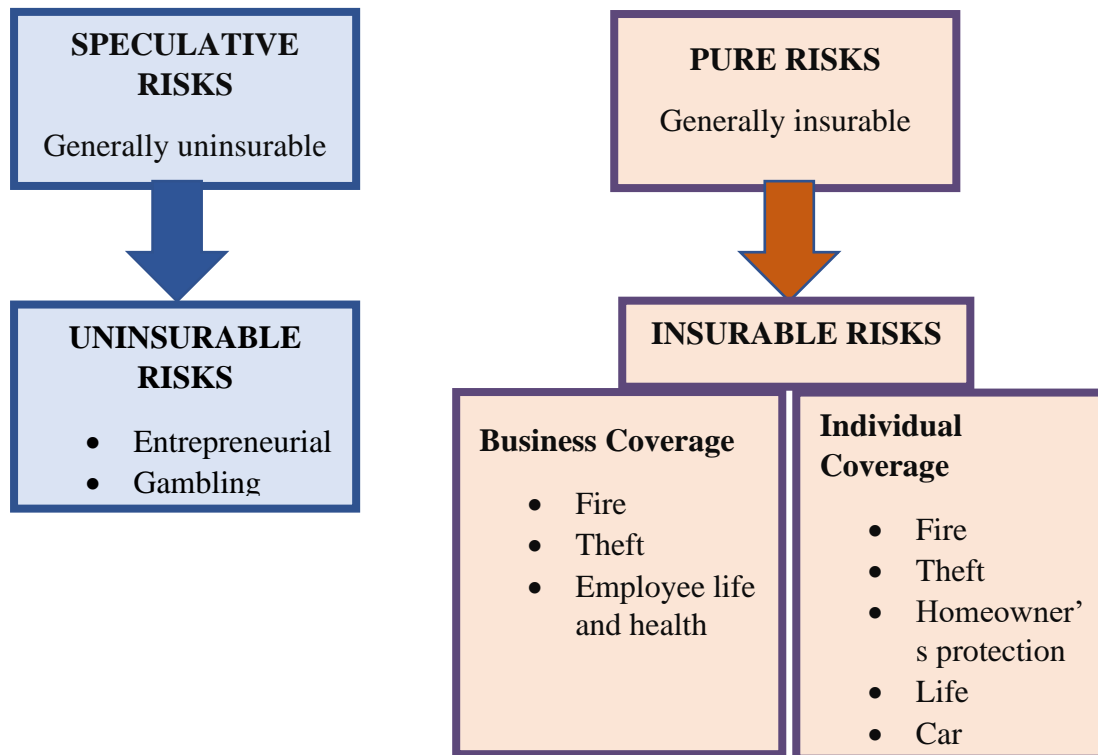
The most popular and most effective way of dealing with risk is to shift or transfer it to an insurance company. The insurance company pledges to cover the loss to an individual's possession at a specific cost (Tavares, 2002:18). The fee that the insured pays to an insurance company is commonly paid once a month and is known as a premium (Huang *et al.*, 2011). The two participants, the insurer and the insured sign a contract called an insurance policy, and the insured is referred to as an insurance policyholder (Gilje, 2016). Risk shifting, therefore, entails the shifting of losses from the policyholder to the insurer (Aiuppa 2001:16).

Huang *et al.* (2011) state that in most cases, the insurance policy is drafted for one year thereafter, the policyholder can renew it each year. The contract specifically stipulates the payable premium as well as the losses the insurance will cover. Insurance is, therefore, an agreement between the insurer and the policyholder which stipulates that the insurer will protect the policyholder against losses at a given fee (Halek & Eisenhauer, 2001:1). However, insurance companies will not cover all kinds of risks; some are insurable risks while some are uninsurable risks. Insurable risks are risks that the insurance company will be able to cover, such as the risk of loss by fire, theft, accident, sickness and death (Halek & Eisenhauer, 2001:24).

On the other hand, uninsurable risks are the risks insurance companies will not cover. These risks are commonly known as speculative risks (Yoo, 2014:727). For example, an insurance

company will be able to protect a shop owner against losses due to a fire but will not be able to protect the shop owner against losses resulting from low sales of the goods sold.

Figure 2. 2: Graphical representation of insurable and uninsurable risks faced by businesses and individuals



Source: Risk Management and Insurance (2016:4)

As shown in Figure 2.2 only pure risks are insurable, the following section elaborates on the two types of insurance, short-term and long-term.

2.4 TYPES OF INSURANCE IN SOUTH AFRICA

Businesses and individuals purchase insurance to cover most pure risks which they may face. They mostly insure their possessions such as buildings, cars, phones and even their life. These can be classified into two categories, short-term and long-term insurance.

2.4.1 Short-term insurance

Boyer and Gobert (2008:289) state that short-term insurance is simply insurance that can be purchased for a short period to guard against losses. Individuals purchase short-term insurance for temporary insurance needs. Short-term insurance aims to cover the policyholder in the case that an unexpected accident or illness occurs (Moodley, 2019:16). Short-term insurance

companies mainly offer cover for as little as 30 days up to 5 years. This type of insurance encompasses all existing types of insurance besides life insurance (Ayuso *et al.*, 2019). Amongst these include car, house, personal liability, as well as business insurance and other property. According to Accenture (2016), this type of insurance has given South Africans the ability to cover financial risks to their material possessions and those of their loved ones without paying extremely high premiums. This type of insurance is popular amongst policyholders because it caters for changing needs, allowing policyholders to cover their possessions without a long-term commitment to either one house or one car.

Table 2. 1: Short-term insurance and coverage

Type of insurance	Coverage	Source
Fire insurance	Covers losses caused by fire.	Enu <i>et al.</i> , 2014
Motor vehicle insurance	Insures against damage or losses resulting from a car accident.	Porter, 2007
Marine insurance	Protects against losses originating from goods being shipped.	Yorulmaz, 2016
Business liability insurance	Protects the policyholder from losses originating from an injury to a person or property.	Holzheu & Lechner, 2009

Source: Author compilation

2.4.2 Long-term insurance

Unlike short-term insurance, long-term insurance aims to provide the holder with an income in the long-term, which is retirement (Cutler, 2003). According to Warshawsky (2003), long-term insurance also provides a lump sum of money if the holder becomes permanently disabled or passes away. Examples of long-term insurance are life insurance, funeral insurance as well as retirement annuities. Generally, one may require long-term insurance if they are involved in a car accident that does not allow them to live independently. In the event of death, the beneficiaries will be paid a monthly allowance or lump sum to assist with finances that were previously catered for by the deceased (Osterman, 2017). However, long-term insurance policies often include hefty premiums, making it less popular (Warshawsky, 2003). The complexity surrounding long-term insurance policies may cause people who purchase them not to read the fine print. This may further result in the realisation that it does not fit their needs, thus resorting to the cancellation of the policy at a later stage.

Table 2. 2: Long-term insurance and what it covers

Type of insurance	What it covers	Source
Life insurance	Pays the beneficiary the amount stated on the policy of the insured when death occurs or disability.	Outreville, 1998
Funeral insurance	Provides a cash payout within 1 to 2 days of death to ensure that funeral finances are taken care of.	Discovery, 2020
Retirement annuity	Provides the policyholder with a monthly fee when they retire.	Sanlam, 2015

Source: Author compilation

Although insurance policyholders have one thing in common, which is insurance, they are individuals who have different perceptions towards risk. This leads them to take different insurance coverage and different life choices concerning their possessions and lives. The following section will focus on defining risk perceptions and the factors influencing the risk perception of individuals.

2.5 THE SOUTH AFRICAN INSURANCE INDUSTRY

Firstly, insurance is a form of risk management in which an individual or a company purchases protection against unexpected financial losses in exchange for a fee (premium) (Tulai *et al.*, 2009). PwC (2019) illustrated the concept of insurance by stating that when an individual is involved in an accident without insurance cover, all financial costs will be paid by the individual. Therefore, purchasing an insurance cover reduces the risk of bearing all financial costs resulting from unexpected losses.

In addition, Tulai *et al.* (2009) stated that an insurance policy is a written contract between the policyholder and the insurer indicating how the policyholder is protected against losses. Insurance policies are contracts that are often valid for a specific period where the policyholder is insured. This is referred to as the policy term. In the event that the policy expires, the insured is required to renew the policy or purchase a new insurance cover (King Price, 2019). During

the policy term, the policyholder ought to pay a premium which is usually paid monthly in exchange for the protection. Thus, the higher the risk, the higher the premium, vice versa.

Given the brief explanation of what insurance is, a detailed explanation of the different types will be given in the sections to follow. Within the financial sector, insurance products are sold differently. This is outlined in the following section.

2.5.1 How insurance is sold

Insurance is sold through various channels, including face-to-face, over the internet, phone or through associations and affinity groups. How insurance is sold is summarised under Table 2.1 as described by (Best, 2019).

Table 2. 3: Different channels for selling insurance

The channels	How it is sold
Brokers	Insurance brokers bring customers and the insurance company into a contractual agreement and help policyholders with the claim in an efficient manner.
Managing agents	The insurer authorises an individual or company through commission to underwrite policies for clients.
Direct sales	In order to increase savings through marketing, direct selling takes place in insurance companies by removing an agent from the transaction.

Source: Best (2019); Cummins & Doherty (2006); Deloitte (2020).

There are several channels of how insurance is sold, and to be able to sell insurance, insurance companies have to be financially sound. The following section discusses the performance of insurers in South Africa.

2.5.2 The financial performance of insurance companies in South Africa

According to Klein (2008), the insurance industry is essential in every economy because without insurance cover, individuals would be exposed to large losses, which can adversely affect the overall economy. The Global Competitiveness Report (2019) indicates that the South African financial system was rated 19th out of 141 countries with insurance premiums (volume to GDP) ranking 3rd out of 141 under the financial system pillar. The South African economy

is currently home to 79 long-term insurers and 100 short-term insurance companies (Sibindi & Zingwevu, 2015:96).

Redda (2015) stipulates that there has been increased competition in the financial services sector, largely influenced by new entrants that stem from insurance and motor vehicle production sectors. Table 2.2 lists the various insurers in South Africa as well as how they have been performing. The financial performance is measured in total assets that the company had in 2017 and 2018. Therefore, the higher the total assets, the greater the financial soundness of the company and the lower the total assets, the poorer the company's financial soundness.

Table 2. 4: Financial performance of South African insurers (R'000)

Insurer	2017	2018	Increase/Decrease
ABSA Insurance Company Limited	2 507 029	2 984 702	Increase
AIG South Africa Limited	4 816 106	4 058 149	Decrease
Alexander Forbes Insurance Company Limited	652 842	741 629	Increase
Allians Global Corporate	1 796 705	2 297 778	Increase
Bidvest Insurance Limited	857 996	859 958	Increase
Bryte Insurance Company (RF) Limited	810 809	1 033 685	Increase
Clientele General Insurance Limited	251 861	291 898	Increase
Discovery Insure Limited	1 759 834	2 388 185	Increase
First for Women Insurance Company (RF) Limited	418 716	429 482	Increase

The Hollard Insurance Company Limited	11 162 770	10 778 367	Decrease
Momentum Insurance Company Limited	528 214	748 091	Increase
Old Mutual Insure Limited	10 907 000	10 537 000	Increase
OUTsurance Insurance Company Limited	5 961 129	6 284 728	Increase
Santam Limited	25 984 000	28 621 000	Increase

Source: KPMG (2019)

KPMG (2020) stated that the sector has strived amid an extremely volatile and uncertain political and economic environment in South Africa. Matemane and Wentzel (2019) and World Bank (2020) also highlighted that the insurance industry has performed well and contributed positively to the South African economy. There have been increases in the insurers' total assets, as listed in Table 2.2, highlighting that the industry is performing well. As depicted in Table 2.2, 85% of the companies have shown an increase in total assets between 2017 and 2018, which further translates to the greater financial soundness of the companies. According to Klein (2008), insurers need to perform well financially because of the trust that policyholders have in them for protection against an untimely demise or unforeseen losses to personal assets.

From a global perspective, the services offered by the insurance sector are crucial to the world economy in terms of risk protection towards the possessions of individuals. Therefore, the next section provides a discussion of the insurance sector's functions in the economy.

2.6 THE FUNCTIONS OF THE INSURANCE SECTOR IN THE ECONOMY

According to Dickinson (1998:519), both life insurers and non-life insurers play a significant role in the economy. The two important roles are risk transfer and the role of mobilising savings and stimulating capital. Skipper (1997:17) further adds to the list risk protection, underwriting, and financial intermediary between customers.

2.6.1 Insurance sector as a savings and investment intermediary

Dickinson (1998) stated that there are several ways in which insurance companies can give rise to savings in the private sector. Firstly, both short and long-term insurance companies stimulate private savings in some way because insurance premiums are paid in advance by policyholders while claims are paid at a later date after covering operating costs. The time delay between the premium paid and the payback of claims differs between short and long-term insurance policies. Understandably, the delay is larger for long-term insurance policies; hence the accumulation of investable funds is higher (Njengomir & Miskic, 2018).

Secondly, long-term insurance, such as life insurance, has a remarkable saving element. This arises not because premiums are paid in advance as mentioned; however, it arises because the life insurance policy deliberately imposes the financial commitment of the policyholder to save for the future (Skipper Jr, 2001:5). Therefore, saving here is voluntary and intentional instead of paying insurance premiums for short-term insurance, which is sometimes considered involuntary savings (OECD, 2017). Undoubtedly, the efforts of insurance companies in creating effective sales have played a significant role in the life insurance business, which has further stimulated the long-term savings in the economy (Panitchpakdi, 2007).

2.6.2 Promotes financial stability among households and firms

With the primary role of ensuring that the risks of individuals and firms are catered for, insurers also contribute to stabilising these sectors' balance sheets. In so doing, insurers give rise to potential financial stability in a country (ECB, 2009). The insurers play a significant role in promoting the financial stability of households and firms' balance sheets by safeguarding the assets by insuring their risks (ECB, 2009). Moreover, Das *et al.* (2003) stated that insurance companies promote financial stability among firms and individuals through the transfer of risks to which they are exposed to. Therefore, this encourages firms and households to pursue various undertakings such as wealth creation and beneficial projects they could not engage in.

2.6.3 Risk protection

A few researchers alluded that having insurance companies in the country relieves the government's tight budget (World Bank, 2020 & Deloitte, 2020). A strong insurance industry reduces the demands on the government to provide social security. This is because the insurance sector can provide cover for individuals and firms in exchange for a premium instead

of relying on the government to provide social security. For individuals with life insurance, this is a form of personal retirement planning that an individual can rely on instead of waiting on the government's social security programs. Also, insurance lowers the total risk faced by the economy since insurers are promoters of risk mitigation activities and aim to manage the risks that they and the policyholders are exposed to (KPMG, 2020).

2.7 THE PRINCIPLES OF INSURANCE

The principles of insurance are the fundamental building blocks that ensure that the insurance sector operates at set standards. The following sections provide a discussion about the principles of insurance.

2.7.1 Principle of utmost good faith

According to Patel (2019), the principle of utmost good faith, the parties to an insurance policy are obliged to observe good faith with each other. Brown and Seck (2013:541) highlight the common law principle of Caveat Emptor means the buyer should be aware, which applies to commercial contracts gives the seller the right not to give all the information to the buyer but only respond to all the questions and concerns rendered by the buyer. This principle also ensures that the seller should not be misleading or deceitful in disclosing the information. However, insurance contracts apply the principle of Uberrima Fides; that is, utmost good faith should be observed, and simple good faith is not enough (Patel, 2019).

In insurance contracts, the insured (buyer) is supposed to know everything concerning the asset they wish to insure; therefore, it is required to practice utmost good faith by providing all the relevant information to the insurer (seller) (Chowdhury, 2007). Likewise, the insurer has to search for relevant information concerning the insured's request through an in-depth examination of the asset or the individual's lifestyle for life insurance (Patel, 2019). The insured is required to observe the utmost good in insurance contracts because they may not reveal details of past illnesses or accidents. Similarly, the insurer is required to observe utmost good faith in the dealings and should not be deceitful or make fake promises to the insured (Chowdhury, 2007). Therefore, both parties are equally required to practice utmost good faith before the risk is covered.

2.7.2 Principle of indemnity

Van Niekerk (1997:1204) defined indemnity as the protection one receives against loss or financial stress. The principle of indemnity also suggests security and guarantee as substitutes to the word, which lay the foundation for the principle of indemnity in insurance. Precisely, in insurance contracts, the principle of indemnity is the financial security that places the insurance policyholder in the same financial position after a loss that they enjoyed before the loss took place (Palmer, 1990:74). This, therefore, prevents the insured policyholder from acquiring more than the amount of the loss and the insured should not make a profit from a loss event but rather acquire the value of the asset at the time of the loss event such as fire or theft. Ultimately, this principle of indemnity is heavily dependent on the constant financial evaluation of an asset.

2.7.3 Principle of contributions

The principle of contribution in insurance is carried out when more than one insurance policies are covering the same risk, and as a result, the total payment is divided among all different insurance policies (Patel, 2019). Also, this principle is closely linked to the principle of indemnity mentioned above in that it is used to maintain the principle of indemnity. This means that the principle of contribution only applies to specific contracts that include indemnity. This principle gives the right to the insurer to claim from all the different policies covering the same loss. According to Vijayan (2016), if one insurer pays for the full loss, he has the right to claim from the other insurers that have received payments from the policyholder.

2.7.4 Principle of loss minimisation

Aris (2019) alluded that the principle of loss minimisation is essential in insurance policies. It states that the insurance policyholder should, at all times, ensure that loss is minimised of the insured property. In the event of a fire on a house that has been insured, the insurance policyholder has to take all appropriate steps, such as trying to put down the fire and reduce further damage to the house and save the property (Patel, 2019). This ensures that the policyholder does not relax because the property is insured but avoids larger losses (SwissRe, 2019).

2.8 REGULATION OF THE INSURANCE INDUSTRY

According to Otto and Henderson (2005), regulation refers to the set structure followed by an underlying system. In the same light, the insurance sector is regulated to monitor and preserve

the industry. In aggregate, the insurance sector standardises various policies and products to control the business of insurance through preventing unfair trade, which may lead to failure of the industry if not regulated. The regulation of the insurance industry includes short-term and long-term insurance.

According to Jackson (2020), South Africa is home to a dynamic insurance market, and it continues to do so by advancements in insurance products. Similar to the Bank Act, which regulates banks, the Insurance Act regulates the prudential requirements of all insurers in the insurance industry in South Africa. The Insurance Act further issues guidance on interpreting the Act (The Department of Justice and Constitutional Development of South Africa, 2018). Highlighted by The Department of Justice and Constitutional Development of South Africa (2018), two distinctive Acts are regulating the insurance industry in South Africa, the Short-Term Insurance Act 1998 (STIA) and the Long-term Insurance Act 1998 (LTIA).

Firstly, the STIA provides regulated registration of short-term insurers and aim to control certain short-term insurance activities such as an accident and the insurance of short-term assets. Secondly, the LTIA regulates long-term insurers and controls various activities connected with life insurance. Lastly, the Financial Advisory and Intermediary Service Act, 2002 regulates institutions providing advice to intermediary services to its customers. The Acts stipulate that any individual in the business of insurance ought to be licensed to do so. Furthermore, financial advisers, brokers or underwriters are at the heart of the industry and should be authorised to provide financial advice that is not misleading to insurance policyholders and potential policyholders (Jackson, 2020).

According to Sibindi and Zingwevu (2015:98), the South Africa insurance sector, short and long-term, is regulated by the Financial Services Board (FSB). Initially, the drive for insurance regulation has been to enhance how the market conduct of insurance companies financially sound regulations. Jackson (2007:253) indicated that market conduct was regulated with policyholder protection in mind. Treating Customers Fairly (TFC) was implemented in the same category because policyholders often feel that they are not treated fairly when they claim; additionally, insurers are not fully open with policyholders. Table 2.3 below summarises some of the Acts that govern the Insurance industry in South Africa.

Table 2. 5: The South African insurance Acts

Act	Objectives
Financial Advisory and Intermediary Services Act (Act 37 of 2002)	To protect the policyholder and all staff employed herein and to regulate the giving of advice to policyholders.
Financial Supervision of the Road Accident Fund Act (Act 8 of 1993)	To further regulate the affairs of the Road Accident Fund and to provide for matters connected in addition to that.
Long-Term Insurance Act (Act 52 of 1998)	To provide for the registration of long-term insurers; for the control of certain activities of long-term insurers and intermediaries; and for matters connected in addition to that.
Short-Term Insurance Act (53 of 1998)	To provide for the registration of short-term insurers; for the control of certain activities of short-term insurers and intermediaries; and for matters connected in addition to that.

Source: The Department of Justice and Constitutional Development of South Africa (2018)

From Table 2.3, it can be deduced that the Acts aim to protect both the insurer and the insurance policyholder. Dinnie *et al.* (2013) highlighted the importance of the Insurance Act in protecting the policyholder. MiWay (2020) stated that South Africa’s policyholder protection regulations continue to change. The STIA and LTIA aim to protect the policyholder's rights who are highly prone to deceit. In a similar vein, the FIAS Act ensures that intermediary remuneration is disclosed and aims to mitigate conflicts of interest connected herewith. Although regulated, the insurance industry sets its standards and has established short and long-term policies to settle personal claims fairly.

2.9 CHALLENGES FACING THE INSURANCE INDUSTRY

While many industries in South Africa feel the burn due to the economic climate, the insurance industry faces a range of challenges that affect both the consumers and, in turn, the insurance companies. The following sections give a detailed discussion of the challenges facing the insurance industry.

2.9.1 Retaining customers

According to PWC (2020), customer retainment is the biggest challenge faced by insurance companies. Retaining customers is essential for insurers because it is their source of income. Losing customers would mean that premiums stop coming in, which can inevitably put an insurer out of business (Kalinda, 2020). Insurance policyholders tend to switch between different policies and different insurance companies due to dissatisfaction, market fluctuation or financial strain. This is a challenge for insurers because they heavily depend on premiums paid monthly by insurance policyholders. A lack of an inflow of premiums deems the insurance company non-profitable.

Moreover, policyholders switching between policies means that the underwriter is required to draft a new policy. This can impact the productivity and cost-efficiency of the insurer (Deloitte, 2020). This translates further to the sensitivity of the industry. Kalinda (2020) indicated that external forces such as market fluctuations, political circumstances, and crime significantly impact policyholders as they change their behaviour.

2.9.2 More catastrophic events

According to the advice from PWC (2020), insurers are faced with unforeseeable serious catastrophic events, which are becoming more severe and more frequent with the years. The challenge with this is that it affects both the insurer and insurance policyholder as a new, unforeseeable event strikes. The most recent COVID-19 has changed insurance policies and has seen many people lose out on their premiums due to failure to pay the insurer, leading to losses. Born and Viscusi (2006:55) assert that these events are a challenge to the insurance industry. As losses arise, the insurer's challenge is a lack of sufficient resources to cover the losses. Less dramatically, the insurer may increase the premiums charged to the policyholder to cover the losses, resulting in dissatisfaction and may cause the policyholder to switch between policies. In addition, the mass looting experienced in South Africa had a detrimental effect on insurers. This was driven by several factors including politics, crime and unemployment. Moreover, this could potentially increase the cost of insurance in the medium to long term because insurers did not anticipate the amount of payouts made to clients.

2.9.3 The impact of crime on insurance policyholders

Crime is an unending challenge faced by all in South Africa. Crime statistics show South Africa has the highest crime levels, particularly Gauteng, where total crimes reported for Gauteng in

2018/19 came to 563,794 (StatsSA, 2020). The crimes committed that may impact policyholders, and their insurers include car hijackings, theft or burglary. These crimes are the core reason why people take out insurance to be able to protect their possessions when the inevitable occurs. Without protection from an insurer, individuals risk losing their valuable possession without reimbursement. For example, in the case that a policyholder buys a phone and insures it through a trusted insurance company if it is stolen the following day, the insurer will be obliged to replace the stolen phone.

Given that South African crime levels are a major concern, the root cause of the high premiums paid by insurance policyholders. Ndlela (2020) asserts that high crime levels further heighten policyholders' awareness of the risks they face. It causes them to always be on the lookout for crime statistics to make calculated risks concerning their insurance policies. According to KPMG (2020), South Africa's skyrocketing crime levels negatively affect short-term insurance policies because the premiums will continue to increase while crime levels escalate. This is merely because insurance policies, mostly in high crime zones, generally account for the risk of crime in the premiums charged (MiWay, 2019).

Crime levels in a country have great potential to affect an insurer and an insurance policyholder simultaneously (Ndlela, 2020). An increase in crime levels in a particular area can increase the premiums the insurer charges the policyholder. This is because the increase in crime levels means that the policyholders have a higher risk of losing their possession due to theft which further propels the insurer to increase premiums or alter the level of insurance coverage. Ultimately, crime is a challenge to the insurance industry due to the risks that arise due to an increase in crime levels.

2.9.4 The impact of unemployment on insurance policyholders

The past two decades have seen extensive theoretical and empirical research on unemployment and the challenges it poses to the South African society. Rocheteau (2006) observed that unemployment could be defined using the strict definition and the broad definition. According to Junankar (2016), the broad definition defines unemployment as the rate of people who are unemployed and available to work but have not taken the necessary steps to find work. On the other hand, South Africa uses the strict definition of unemployment, which refers to

unemployed people who are actively seeking employment in the last four weeks before the interview (International Labour Organization, 2019).

South Africa's unemployment rate has alarmingly increased in the past decade from 23,5% in 2009 to a record high of 28,5% in 2020 (World Bank, 2020). According to Ferreira (2016), the South African government has been unsuccessful in the fight against unemployment. The cost of unemployment causes hunger in society and increases crime rates (Raphael & Winter-Ebmer, 2001:259). Congressional Research Service (2020) stipulated that the increase in unemployment has been a major challenge to institutions heavily dependent on customers for survival, in particular, the insurance industry.

Vroman and Woodbury (2014) stated that unemployment could have a negative impact on the insurance industry. This is mainly because it affects the users of insurance, policyholders. An increase in unemployment could potentially cause policyholders to have difficulty in paying for premiums that cover their possessions. Moreover, policyholders have negative sentiments towards unemployment because an increase in unemployment leads to increased crime. Policyholders thus tend to keep themselves well informed about unemployment levels to make appropriate adjustments to their policies. Leibbrandt et al. (2008) highlight that policyholders fear increased crime or failure to pay premiums if unemployment rates increase.

2.9.5 The impact of political risk on insurance policyholders

Political risk can be defined as the risk that arises due to political instability in a country (Sottilotta, 2012). Generally speaking, political risk has been likened to country risk, which is the uncertainty regarding a country that could result in losses for individuals who are financially invested in that particular country. However, Hoti and McAleer (2003:539) stated that country risk does not only refer to financial risk but also operational. Country risk further incorporates a range of risks with economic characteristics causing problems in national environments (Howell & Chaddick, 2007).

According to Essel and Mostert (2013:34), political risk is of paramount importance to business operations globally because of the adverse impact it has on the financial performance thereof and may lead to failure of companies and industries. Wilkinson (2014) states that political risk is rife in developing countries with emerging markets such as South Africa. Political risk

originates from government and other social pressures in society. It is highly probable that when a country has an unstable political environment, it may experience unexpected changes to businesses (Brink, 2004:4). Simon (1984:130) highlighted that the openness of society might initiate factors such as protests and boycotts, which are a sign of political unrest. According to Groth and Roberts (2001:302), political risks are heightened when the society's expectations of society are not reached.

Ultimately, political risks are a cause for concern for insurance policyholders. It may negatively influence the insurance performance as unexpected changes occur which were previously undetected. In addition, the political risk may further negatively influence policyholders' confidence in the possessions they have insured. This research paper, therefore, aims to determine whether policyholders consider political risk when making insurance decisions. Moreover, due to limited resources, the results will determine whether current political circumstances influence policyholders' decision-making and their opinion towards the current political circumstances.

2.10 SYNOPSIS

This chapter focused on defining and expanding on the concept of risk and analysing South Africa's insurance industry. Within this chapter, subject matters were discussed to set the study's literature review in line with the objectives set in Chapter 1. The subject matters include risk, with specific reference to the definition and how it relates to insurance. Furthermore, a review of the literature on the general overview of the insurance industry with a specific focus on the role and function of the insurance sector in the economy and principles of insurance was presented to gain an insight into the industry. The South African insurance industry plays an important role in the economy that cannot be performed best by other players in the financial services industry. These specific roles are savings and investment intermediaries, promoting financial stability among households and firms and risk protection.

Several principles are guiding the insurance industry, owing to this unique industry, which are the principle of utmost good faith, the principle of indemnity, the principle of contribution and lastly, the principle of loss minimisation. Like every industry in the economy that faces challenges, the insurance industry is no different. Chapter 2 discusses retaining customers, more catastrophic events, the impact of crime, unemployment and political risk on the policyholders as the challenges faced by the insurance industry. Lastly, this chapter focuses on the regulation of the insurance industry.

In the following chapter, Chapter 3, an analysis of the factors influencing the risk perception of insurance policyholders will be provided. The topics discussed in this chapter include contextualising risk, discussing the influence of demographics, financial well-being, behavioural finance, and the external environment on risk perception.

CHAPTER 3: RISK PERCEPTION

3.1 INTRODUCTION

Everything a person does involves some level of risk attached to it. According to Schulmerich (2002), risk is defined as the uncertainty regarding the outcome of an event. Similarly, several researchers, Weipers (2002), Damodaran (2008), Singh (2009) and Gurung (2016), defined risk as a concept that human beings established to assist them in coping with the hazards and uncertainties of life. These uncertainties can cause people to be either less tolerant or highly tolerant towards engaging in certain events causing them to have different perceptions towards risk. Risk perception, therefore, emerges because some individuals may fear engaging in an event while other individuals will not. This is also true to insurance policyholders who may be less fearful of engaging in certain financial or non-financial choices, while others may be more fearful of doing so.

Ricciardi (2004) stipulated that individuals have different perceptions towards risk, which can be affected by demographic and socioeconomic factors such as age, gender, race, level of education, and income levels. These factors cause people to view risk differently as younger people tend to be more willing to accept high levels of risk while older people may not engage in high-risk events or circumstances (Olsen & Cox, 2001).

In order to shape this study, in-depth discussions on the link between financial well-being and risk perception are necessary. A study by Olsen (1997:62) highlighted that individuals who have poor financial well-being are more fearful of risk, hence being less accepting of risk, while those with sound financial well-being are less fearful and therefore more accepting of risk. Similarly, behavioural finance forms a fundamental part of the study by focusing on the influence of worry, catastrophic risk, familiarity, attention, heuristics, loss aversion and representativeness on risk perception (Ricciardi, 2004). Lastly, the external environment that involves factors occurring outside may affect organisations and influence risk perceptions. A recent reference to this is COVID-19, which has shaken the entire world, has also influenced how insurance policyholders perceive risk (Medyanik, 2020).

Through analysing literature, Chapter 3 will, therefore, lay the foundation for achieving the following objectives:

- Contextualising risk perception;

- Determine how demographical factors influence the risk identification and risk perception of insurance policyholders;
- Determine the relationship of risk tolerance on risk perception of insurance policyholders;
- Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng; and
- Identifying the exogenous factors that influence risk perception of insurance policyholders in Gauteng.

Therefore, the first section of this chapter focuses on defining risk and the different techniques of managing risk. The different factors influencing risk perception have been outlined to explain risk perception. The second section discusses the overview of demographics and how they influence risk perception. The third and fourth sections outline the overview and link between behavioural factors, financial well-being, and risk perception. The last section goes on to establish the link between risk perception and influences from the external environment.

3.2 DEFINING PERCEPTION

Schwartz (1998) and Weber (2003) are part of the few economists that have extensively discussed the concept of risk perception in their studies. According to Epstein and Pava (1994:60) this concept of perception indicates the existence of subjective risk as a component that was previously not recognised by most researchers. Pinegar and Ravichandran (2003:230) stated that perception refers to the ability of individuals to view objects and mentally acquire the qualities utilising senses, awareness, and comprehension. Wade and Tavris (1996) provide a psychological definition of perception as the process of organising and interpreting sensory information through the brain. Luthans (1998:101) regards perception as a unique and complicated concept whereby mastering it lies in how the individual interprets a situation, not the detailed record. Similarly, Halsem (2003) describes perception as selecting environmental stimuli to produce a meaningful experience for the individual who perceives it. Moreover, it involves the process of taking in information and making sense of it. Perception recognises the searching for, acquiring, and processing information about events, people, and situations happening around people (Weber, 2003).

The importance of perception is that it shapes how people become conscious of what is happening around them (Chew & Jahari, 2014:382). Perception is also a fundamental building block to understanding individuals' behaviour, which is a complicated technique by which stimuli affect an individual. Holm *et al.* (2017:115), in another view, define perception as a

methodological process of organising and interpreting one's sensory intuition concerning events or actions to give meaning. Perception is also referred to as the best explanation for sensory information that an individual can settle on based on a person's past experiences and knowledge. Wolff *et al.* (2019) further described perception using a unique definition. Perception refers to the world as experienced, seen, heard, smelled, and tasted. Although one cannot put themselves in another's shoes, perception accepts verbal reports of people's experiences. This means perception is the process of utilising another individual's experience to acquire clues to your own experience.

It is clear that literature has a variety of interpretations regarding the exact definition of the concept of perception according to the works of Epstein and Pava (1994:60), Wade and Tavis (1996), Luthans (1998:101), Schwartz (1998), Pinegar and Ravichandran (2003:230), Halsem (2003) Weber, (2003), Holm *et al.* (2017:115), and Wolff *et al.* (2019) which is similar regarding the concept of risk. Thus, authors from the area of finance and investments, Rock (1995) and Ricciardi (2004), formulated the basic characteristics of perception:

- Perception is based on the behaviour of an individual regarding their past experience, of an event or activity;
- Much attention is given to different components of similar situations;
- A stimulus that the individual does not receive does not affect their behaviour, while a stimulus that they receive, although it may not be real, will affect the individual's behaviour;
- Perception is the technique whereby an individual senses reality and reaches an opinion or viewpoint;
- What an individual perceives may not be factually accurate or exist; and
- Lastly, perception is an ongoing decision-making process that results in people having different views concerning a given event or situation.

These characteristics exist and can be incorporated in the Litterer's perception model, as shown in Figure: 3.2 in the following section.

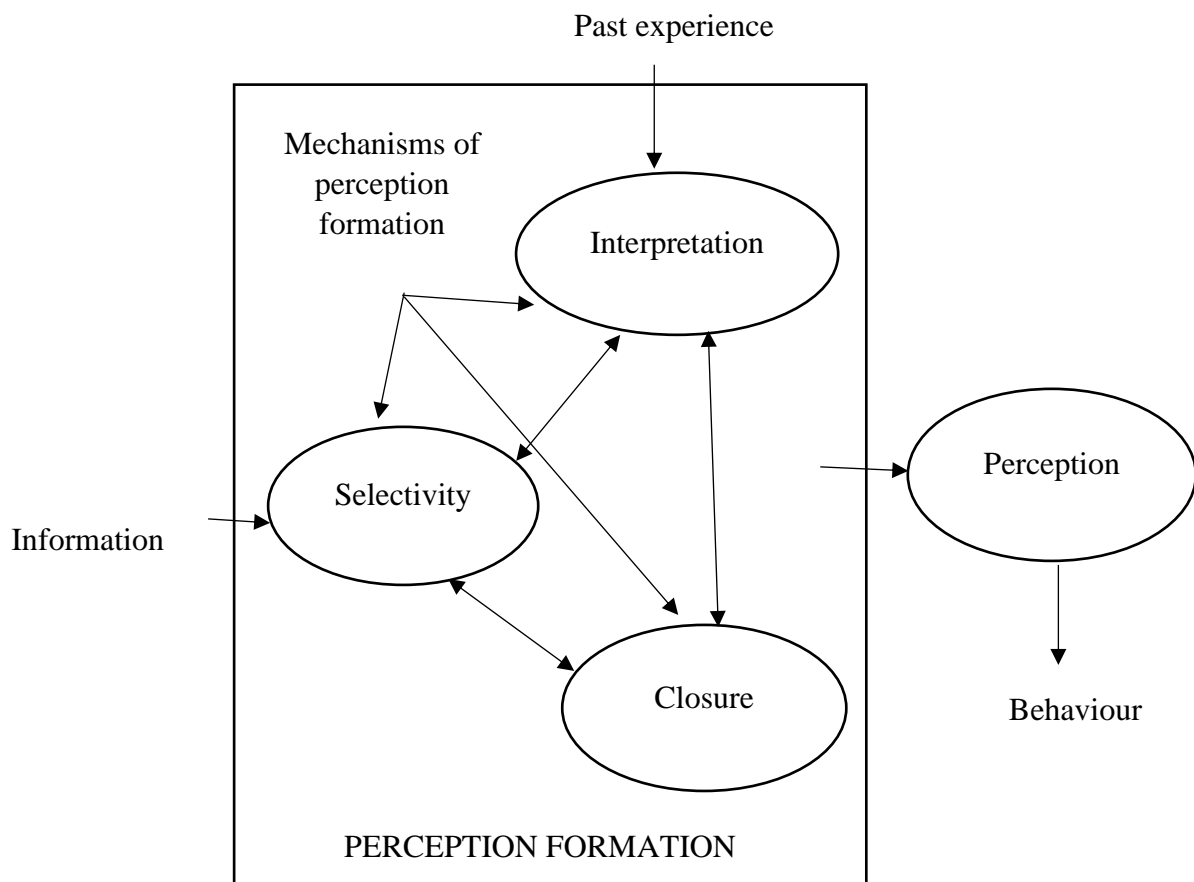
3.2.1 The Litterer's perception formation model

According to Ricciardi (2004:24), the Litterer's Perception Formation Model provides a visual presentation of the perceptual process of individuals. This model has been used by financial scholar Gooding (1978:1401) in a research study on investor perception. Litterer's model

illustrates how perceptions are produced, which inevitably influences an individual's behaviour (Kast & Rosenzweig, 1985). The model consists of three mechanisms of the external factors. Firstly, selectivity or selective perception is when an individual's tendency to concentrate on specific information from a range of choices. This implies that an individual may place a higher likelihood of a specific outcome, which they are more exposed to consciously or subconsciously than what is reasonable (Ricciardi, 2004:25).

Secondly, the interpretation mechanism assumes that the same or similar stimulus, risky event or activity, can be understood differently by different decision-makers (Ricciardi, 2004:25). This interpretation process is heavily dependent on a person's experience with the situation at hand. Lastly, the closure mechanism in Litterer's model suggests that individuals tend to have a complete picture of any specified information or situation (Kast & Rosenzweig, 1970:218). Thus, an individual tends to attach additional information than what the information reveals to close the thought process and make it significant.

Figure 3. 1: The Litterer Perception Mode



Source: Ricciardi (2004:25)

As illustrated in Figure 3.1, Litterer's perception model could potentially be applicable to risk perception and South African insurance policyholders, signifying that the way individuals perceive risk will influence their behaviour towards certain risk events.

3.3 RISK PERCEPTION

The previous sections clearly defined and discussed the concepts of risk and perception, respectively. However, the two concepts are inseparable twins and are commonly referred to as risk perception by several researchers (Rohrmann & Renn, 2000 & Wolff *et al.*, 2019). Seeing that risk perception is the main focus of the study, it is essential to give a thorough discussion of the concept. There are various definitions of risk perception from various studies. However, the fundamental factor of subjective judgement towards risks or hazards is at the centre of many of the definitions.

According to Weber, Blais and Bets (2002:267), risk perception can be defined as a personal judgement about how an individual views how risky a choice situation is. Similarly, Slovic (2000:36) supported the notion of risk perception as subjective judgement and further stated that risk does not exist without our minds and cultures because our minds can process and measure risk. Furthermore, subjective dimensions, including people's feelings, beliefs, societal values and attitudes, are important factors in defining risk perception (Kaptan *et al.*, 2013). The risk perception study by researchers Blach (2010) provides a definition that is considered universally accepted and relevant in this study. Hence, defining risk perception as the beliefs, societal values and attitudes that an individual can attach to a financial product (Chakreeyarat, 2015). Not only do researchers define risk perception, but they incorporate factors influencing risk perception to provide an in-depth discussion of the concept.

3.3.1 Factors influencing the risk perception of decision-makers

As established, risk perception is built on the subjective risk of individuals. Accordingly, subjective risk refers to what an individual believes to be true concerning a given situation (Diacon & Ennew, 2001:389). This estimation is largely dependent on the individual's state of mind (Williams & Heins, 1989:9). A fundamental issue with the subjective nature of risk perception is that individuals are guided by opinions, past experiences and attitudes to arrive at a certain worldview or perception (Chakreeyarat, 2015). Sjober (2000) established that most people are biased when making decisions concerning a risky event rather than logically analysing the facts. Furthermore, people do not view information the same due to different

beliefs, attitudes and exposure (Blach, 2010). This is supported by Sutton’s (2010:33) study, which found that even people with high financial knowledge draw different conclusions from the same data set influenced by personal opinions, beliefs, and exposure.

Therefore, a distinction of the factors affecting the risk perception of individuals can be drawn, as indicated in Table 3.3. What can be drawn from the factors influencing risk perception is that they are mainly based on the feelings and acceptability of risk determined by human nature (Sutton, 2010:33).

Table 3. 1: Factors influencing the risk perception of an individual

Factor	Feelings and willingness to accept risk	Sources
Level of control	An individual feels less risk when they have a relatively high degree of control over the hazardous situation.	Komitet <i>et al.</i> (2013)
Familiarity with hazards	Unfamiliar hazards are perceived as unacceptable.	Smith <i>et al.</i> (2011)
Direct benefits	If the benefits of a situation or event are clear and visible benefits, acceptance of risk will be higher.	Slovic (1981)
Natural vs man-made risk	People are more fearful of man-made risks, therefore, are more accepting of natural risks than man-made risks.	Wachinger <i>et al.</i> (2010)
Recency of events	Events that have occurred in the most recent past tend to be more feared; hence individuals tend to associate them with higher levels of risk.	Komitet <i>et al.</i> (2013)
Consequence term	Individuals tend to attribute high-frequency events with high-	Smith <i>et al.</i> (2011)

	risk levels and low-frequency events with low-risk levels.	
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Source: (Slovic,1981), (Wachinger *et al.*, 2010), (Smith *et al.*, 2011), (Komitet *et al.*, 2013).

Table 3.1 clearly shows that people’s perceptions can differ because of certain factors. Kahneman and Tversky (1979) indicated that human judgement is flawed toward numbers and, therefore, would assess one risk as high and another as low without any mathematical computations. Williams and Heins (1989:9) and Sjoberg (2000) supported Kahneman and Tversky (1979) and stipulated that individuals cannot fully recall relevant experiences used to assess their risk perception. Moreover, logical errors are made by individuals due to the frequency and likelihood of the event happening (BIS, 2011). Overall, it is important to note that people tend to commit errors and omit information in their subjective perception of risk (Willet, 2002).

3.4 THE LINK BETWEEN RISK PERCEPTION, RISK TOLERANCE AND FACTORS INFLUENCING RISK PERCEPTION

The concept of risk perception is not a stand-alone concept. It can be influenced by demographics, financial well-being, behavioural finance and the external environment. The following section elaborates on the links between risk perception and the factors above.

3.4.1 The influence of demographics on risk tolerance and risk perception

Demographics refers to the description of people (United Nations, 2014). Similarly, Chakreeyarat (2015) defines it as the process of acquiring data about people who meet specific criteria at a certain point. According to Brunson *et al.* (2015), demographics assists in grouping a population according to characteristics such as age, gender, and ethnicity. These demographics significantly influence individuals' risk perceptions as several studies have found that younger people (between 18 and 34) tend to be more tolerant towards risk than older people (35 and above), who are less tolerant towards risk. The section below will discuss how demographics influence risk perceptions.

Sung and Hanna (1996) conducted early research about the effect of demographic and socioeconomic factors on several financial factors in the financial services context. Demographic factors include, amongst others, age, gender, and ethnicity (Plous, 1993 & Bazerman, 1998). On the other hand, socioeconomic factors include marital status, level of education, employment status, and income, amongst several others (Slovic *et al.*, 1980).

Similarly, Bajoux-Besnainou (2003) used the following demographic and socioeconomic factors from 1992 data for Survey of Consumer Finance (SCF): age, years left until retirement, education level, ethnicity, marital status, household size, and homeownership.

The results concluded that younger people who had more than 29 years to retirement were mostly highly educated and non-white (Bajoux-Besnainou, 2003). Also, they were self-employed and had more tolerance towards high levels of risk. However, Sung and Hanna (1996) were unsuccessful in determining the same link with age, household size, occupation and homeownership. Wang and Hanna (1997) conducted a similar study examining demographics and socioeconomic factors and found a significant positive relationship between age, income, education, and marital status on the levels of risk tolerance. According to Han (2005), the same results hold for insurance policyholders as younger policyholders are more accepting of risk than those who are older.

Extending prior research, Grable and Lyton (1998) found that gender, marital status, occupation, self-employment, race, and education differed with individuals' levels of risk. Among the factors mentioned above, individuals with higher levels of education are willing to take more risks than individuals with lower levels of education (Padua *et al.*, 2013). This is because those with higher levels of education have more financial knowledge, stable and predictable income; therefore, they are more knowledgeable about the losses they face when taking risks (Brown & Taylor, 2007). Regarding gender, men tend to have less dread and worry about risk compared to women. This is because, in general, women tend to have more pro-safety attitudes than men, making them highly concerned about risks.

Pilisuk and Acredolo (1988) also conducted a similar study on demographics and found that high-income earners are less concerned about hazards than lower-income earners. The results highlight that higher income earners often have a better understanding of risks and hazards and therefore become more accepting of them. In this case, the insurance policyholders who are considered high-income earners are less concerned about risks relating to possessions they have insured because they can be easily replaced. On the other hand, lower-income earners are less tolerant to risks making them more concerned because their insured possessions will be hard to replace if the insurance cover does not provide full coverage for an item or property (Savage, 1993).

The unknown factor regression lacked explanatory power, and it was difficult to conclude from the results. However, Kadoya *et al.* (2018) stated that as people get older, they become more informed about risk and tend to be less worried about risks. This is the same for insurance policyholders who often lack full knowledge about their insurance policies. Lastly, the personal exposure factor revealed that blacks feel more threatened and thus are more fearful of hazards than non-blacks. Moreover, older people feel more exposed to risks that cause health threats and thus stay informed about new diseases that may threaten their health. OECD (2007) reported that insurance policyholders with health conditions often feel more exposed to risks and resort to life insurance if they are still young, with children.

As stated, the willingness of an insurance policyholder to take on a certain level of risk is called risk tolerance. In addition, several demographic and socioeconomic factors can influence an insurance policyholder, as shown in Table 3.2.

Table 3. 2: Demographic and socioeconomic characteristics influencing risk tolerance

Characteristics	High tolerance
Age	Young individuals
Employment status	Full-time employee
Ethnicity	White
Gender	Male
Health status	Good or excellent
Income	High level of income
Income variability	Stable and predictable
Level of education	Bachelor's degree or higher
Level of income	High level of income
Level of financial knowledge	Average or higher
Marital status	Single
Net worth	High net worth
Religion	Non-religious
Homeownership	Homeownership without mortgage

Source: Irwin (1993)

Savage (1993) aimed at analysing demographic influences on risk perceptions by looking at three factors: dread, the unknown risk, and personal exposure to the risk. The study by Savage (1993) considered how individuals view common hazards (home fires, accidents and health

issues) using the three factors mentioned above. According to Slovic *et al.* (2000), people tend to have higher dread for events the individual cannot, by personal skill or diligence, avoid harm. Also, the unknown factor comprises the fact that an individual may not know the risk or may not be aware of the hazard as it occurs. Lastly, the personal exposure factor represents the relevance of a hazard to the life of an individual.

Savage (1993) found that for the dread factor, the adjusted R-squared was 0.19, indicating that approximately 19 percent of the results was explained by the regression. However, strong results for individual demographic factors were shown. Blacks tend to be more fearful of hazards than other races. The results show that people with lower levels of schooling and higher incomes are less fearful of hazards. This is because high-income earners can easily replace insured possessions, which can threaten certain risks (Discovery, 2009). Savage (1993) further stated that women have more worry and dread for risks while older people are significantly less fearful of risks. This is because older people have had a long time to plan their lives in case a hazard strikes.

3.4.2 The link between risk perception and financial well-being

Theoretically, financial well-being is a state of being wherein a person can easily meet current financial goals and feels that future financial goals are well cared for while making choices that allow them to enjoy life (Bruggen *et al.*, 2017). Consumer Financial Protection Bureau (CFP) (2015) further defined financial well-being as a point in time where one has financial security and financial freedom, both in the present and future. Financial well-being is having a sense of security that one has enough financial means to spend without worrying about the future financial state. Research conducted by CFP (2015) and Bruggen *et al.* (2017) found that although there are several definitions of financial well-being, the meaning was remarkably similar despite different ages, races, and incomes.

Another way that the OECD (2017) defined financial well-being is not worrying about finances now while thinking about the future. According to Bruggen *et al.* (2017), financial well-being includes a range of elements that can be summarised into four elements:

- An individual's financial ability to cater for day-to-day and month-to-month finances;
- An individual having the financial security to deal with unprecedented financial shocks;
- The ability to achieve financial goals; and

- Acquiring financial freedom which allows you to make choices that lead to the enjoyment of life.

The concept of financial well-being has been studied in various academic fields, including economics, psychology, and consumer decision-making. Financial well-being has a time dimension attached to it (Guo *et al.*, 2013). In the definitions above, it is clear that it includes both the present and the future situation. Given the paramount importance of the time dimension, it would be unrealistic to assume that an individual's financial well-being remains the same over a long time. Van Praag and Frijters (2003) highlights that since personal factors such as health, career choice, age, and family structure change with time, people's financial well-being stays dynamic.

According to Mahdzan and Diacon (2008), financial freedom forms a fundamental part of the concept of financial well-being. It implies that an individual does not feel compelled, stressed or worried about making certain financial choices (Choudhury, 2009). Having financial freedom enables an individual to make choices without worrying about the future financial state. According to a study conducted by CFP (2017), individuals perceive themselves as financially secure when they can spend on their wants rather than needs, such as going out for dinner or a movie with friends and being able to be generous towards their community.

Mahdzan and Diacon (2008) stated that having an existing insurance policy does not guarantee good financial well-being. Some insurance policyholders exhibit poor financial well-being while others exhibit good financial well-being. In prior research conducted by Flynn *et al.* (1994:1101), it was found that personal actions and financial well-being are highly dependent on the individual's perception of risk and how they appraise their objective situation. Concerning financial well-being, it has been established that individuals who are in the same financial situation regarding how they earn, can exhibit different levels of financial well-being (Anderson *et al.*, 2013). Joo and Grable (2004:25) stipulate that this is due to individual differences that are highly influenced by different attitudes towards risk and the level of worry concerning various decisions they encounter in their lives.

Malone *et al.* (2010) conducted a study on financial well-being and risk perception and found a link between risk perception and financial well-being. It was concluded that people's positive financial well-being could positively perceive other non-financial risks. This means that the

more policyholders are satisfied with their financial state, the more they perceive life positively and have a positive outlook about risks. Furthermore, research by Lusardi (2012:25) indicates that adults who can predict their future financial well-being also feel that they can manage their current financial situation. This helps them feel more financially secure and gives the individual the sense that they will be able to deal with financial losses that may strike (Lusardi, 2012:25).

Kutbay *et al.* (2018) stipulated that self-employed people are likely to exhibit poor financial well-being. A meta-analysis was conducted to test the link between financial well-being and risk perception, and it was shown to be reliable (Lannello *et al.*, 2020). Researchers Van Campen *et al.* (2010) alluded that inability to control one's financial well-being is the leading cause of increased dread about uncertainty about the economy and life choices. Also, Van Campen *et al.* (2010) stated that people with poor financial well-being tend to be younger (18 – 34 years), single, living in rented accommodation and living on lower incomes. It is evident that because this group of people has not had enough time to accumulate wealth and buy a property of their own, they are likely to face financial problems. On the other hand, individuals who are much older (older than 34 years), with their own homes, married or living with a partner, with good health and on higher incomes are likely to have better financial well-being and are more tolerant towards risk due to their good financial state (Lannello *et al.*, 2020).

Friedline (2020) highlighted an interesting link between financial well-being and risk perception. It was further found that women with poor financial well-being tend to have high levels of financial stress than men (Friedline, 2020). This is because women are more responsible for managing finances in their homes and thus feel overwhelming stress about the future financial well-being of their homes. There are also differences in financial well-being across racial groups (Faber, 2018). Black people exhibit poor financial well-being compared to non-blacks, making them less willing to engage in risky events and financial choices because they are more dreadful of the risks. Overall, it is evident that financial well-being has a certain level of influence on individuals' risk perceptions, which differs according to race, gender, age, homeownership, and marital status (Friedline, 2019).

3.4.3 The link between risk perception and behavioural finance

According to Isidore (2018), the financial decision-making process of individuals has proved to be irrational. Essentially behavioural finance attempts to explain the extent to which

emotional processes impact the financial decision-making process of individuals (Ricciardi & Simon, 2000). According to Olsen (1998), behavioural finance is a concept that bridged the gap in standard finance by explaining the importance of psychological and economic principles in financial decision-making. Behavioural finance rests on three elements: knowledge of finance, knowledge of economics, and cognitive psychology in decision-making (Ferreira, 2018).

Taylor (2000) stated that the radical insight of behavioural finance is that people are human. According to De Bondt (1992), behavioural finance can be defined as the underlying psychological power that drives financial decision-making behaviour. The notion of behavioural finance mainly looks at how biases influence financial decision-making (Plous, 1993). In a similar vein, Ricciardi (2004) defined behavioural finance as an interdisciplinary field that develops a theoretical basis, know-how and research methods from different decision-making fields of psychology and behavioural economics.

Fulfer and Maille (2018) claim that a significant component of behavioural finance is that it examines how individuals make decisions in terms of specific concepts such as the prospect theory, over-confidence and loss aversion. Financial researcher Pan (2016:98) believes that the classical decision theory, which states that individuals are rational beings, is incorrect since individuals are irrational beings in the decision-making process. Kahneman & Tversky (1979) advocated the prospect theory, which was a new theory regarding the risk-taking behaviours of individuals. The prospect theory of behavioural finance deviates from the classical theory that people act rationally.

In addition, Olsen and Cox (2001) stipulate that there are several biases fuelled by behavioural factors that impact the choices individuals make in risky situations. This theory assumes that individuals are loss averse in the sense that they are more concerned about losses than they are about gains (Olsen & Cox, 2001). This highlights the theory that individuals tend to assign more weight to avoid losses than to achieve gains in risky situations. As pointed out in Edwards (1995), Ricciardi and Simon (2000), and Ricciardi (2000) studies, individuals have biases that are influenced by emotional and cognitive factors, mental processes, which influence their financial choices under specific situations. In particular, Naughton (2002) advocated that the prospect theory in behavioural finance is an in-depth explanation of how people make decisions

in difficult circumstances. Overall, behavioural finance pertains to how individuals make irrational financial choices in certain situations.

For behavioural finance to exist, there needs to be a certain behavioural trait influencing how people view risk in order to make financial decisions. Fischhoff *et al.* (1978) conducted a study that supported the importance of behavioural factors in the risk perception of unsophisticated investors. In essence, behavioural finance challenged the rational behaviour theory and gained prominence in establishing the factors that influence risk perception. Notably, an important gap has been identified in the literature as little is known about the influence of behavioural finance on risk perception. A recent study by Ainia and Lutfi (2019) analysed behavioural factors and risk perception but failed to incorporate important determinants such as trust and control in their study. Only, Diacon and Ennew (2001) incorporated trust in their study but omitted worry. Resultantly prior research omitted important biases of behavioural finance in explaining risk perception.

A behavioural finance study conducted by Ricciardi (2008) suggested that dread and unknown have a significant influence on the risk perception of individuals. Chou and Wang (2011) continued with the research and concluded that worry, trust and familiarity are behavioural factors influencing the risk perception of individuals. According to Ricciardi (2004), worry refers to the extent to which an individual feels anxious about their financial decisions. MacGregor (1991) found a strong and positive influence of worry on risk perceptions. This indicated that the more worried an individual is about a specific financial situation, the higher the risk is perceived, and they become low-risk tolerant individuals. The same findings were found in studies by Koonce *et al.* (2003) and later Cou and Wang (2011). Importantly, Sachse found that worry was the variable with the highest predictive power for how individuals perceive risk.

Slovic *et al.* (1987) laid the foundation for other researchers looking into risk perception. Koonce *et al.* (2005) identified catastrophic risk and defined it as the likelihood of an extremely negative outcome. A positive link was further identified between catastrophic risk and the overall risk perception of individuals (Koonce *et al.*, 2005). Adapting from the work of Koonce *et al.* (2003), several studies looked at more extreme outcomes such as the risk of losing all or most of the money invested and found a strong positive link (MacGregor *et al.*, 1991; Olsen,

1997; Diacon & Ennew, 2001; Chou & Wang 2011). Moreover, an almost perfectly positive link between the overall risk perception of individuals and the risk of losing all money invested was established (Chou & Wang, 2003).

Familiarity is another behavioural aspect influencing the risk perception of individuals. It refers to how much knowledge an individual has concerning a financial product or factors influencing their financial product (Diacon & Ennew, 2001; Koonce et al., 2005; Chou & Wang, 2011). Interestingly, there exists a negative relationship between familiarity and risk perception (Koonce and wang). It was established that financial experts such as investors tend to perceive financial items or economic circumstances as less risky if they are well known by the individual. This means that the more the individual knows about a financial circumstance through keeping themselves informed about their environment, the less risk they will perceive. Alternatively, Sasche (2012) found a positive relationship between the two indicating that the more familiar individuals are about a certain risk, the more they fear it might affect them. The study shows that those who were unfamiliar with financial risks perceived less risk.

Thaler and Johnson (1990) stated that behavioural finance flows from the fact that individual financial decision-making is irrational under uncertainty. These behavioural biases, therefore, explain what influences people's decision-making processes.

3.4.3.1 Representativeness

Early research suggested that representativeness refers to the shortcut taken by the human mind that is an integral part of the judgement process (Tversky & Kahneman, 1971). Decision-makers exhibiting this factor often form a detailed generalisation about a phenomenon based on a few attributes presented to them. This mental shortcut tends to make it difficult for individuals to thoroughly scrutinise new information making them biased towards past information. Policyholders subject to the representativeness bias tend to base their financial decisions on past performances of an insurance company. Therefore, these individuals tend to over or underestimate the insurance company's capabilities to offer their desired cover.

According to Ricciardi and Simon (2001), individuals possessing representativeness predict future uncertainty from past experiences to draw holistic conclusions. In doing so, individuals disregard relevant information that should be included in the decision-making process. The effect of representativeness can be seen in individuals who rely on past experiences or the

experiences of others to conclude a certain phenomenon. Douglas Van Eaton concluded that people who base decisions on past experiences perceive higher risk in events than those who rely on new information. Ultimately, relying on a single piece of information at hand leads to insufficient market research about a current risky event that the individual may engage in (Ferreira, 2018:44).

3.4.3.2 Framing

Another factor influencing risk tolerance is framing. According to Kahneman and Tversky (1979), framing can be defined as an assessment where thoughts or questions are formulated in the same manner but presented in two distinct but equal means. Similarly, Ricciardi and Simon (2001) found that individuals are drawn towards the negative by being less accepting of losses, thus extracting non-identical responses for the same question. Moreover, Duchon *et al.* (1999:15) commented on framing by stating that individuals evaluate negative and positive situations differently. Individuals subject to the framing bias do this by giving an extreme response to losses than gains and relying on a single piece of information at hand in their financial decision-making process. Therefore, individuals such as investors and insurance policyholders are more inclined to take risks based on absolute losses and not take risks on absolute gains.

3.4.3.3 Loss aversion

Another behavioural finance bias that plays a role in risk tolerance is known as loss aversion. Behavioural finance expert Ricciardi (2004) refer to loss aversion as the assumption of prospect theory that individuals are more concerned about losses and allocate more significance to losses than gains (Ricciardi & Simon 2000). According to Ricciardi and Simon (2000) and Ricciardi (2003) individuals tend to be thin-skinned and exhibit vulnerability towards losses which makes them highly determined to always avoid losses. Ricciardi and Simon (2001) further point out that individuals, in some instances, tend to take higher risks to avoid the losses they are exposed to completely.

According to Singh (2012:120), loss aversion is reflected in market participants who tend to hold on to their initial financial decisions regardless of how the market is performing. Individuals with insurance policies subject to the loss aversion bias are more likely to forfeit a lower premium for higher cover. Moreover, they will keep their initial long-term insurance

policy cover regardless of market volatility. Academic researchers have identified that many individuals are bothered by losses twice as much in absolute terms than an equal gain. These errors in judgement thus cause an individual to put more risk concern on losses than on gains.

3.4.3.4 Regret aversion

The regret aversion bias refers to the feelings of regret or grief that individuals experience because of their financial decisions (Quiggin, 1994). Individuals who experience this bias will regret making a certain financial decision because it failed to yield the expected results. Therefore, insurance policyholders subject to the regret aversion bias will regret insuring when they experience complications while claiming.

3.4.3.5 Self-control

According to Dickason (2017), the self-control bias evolved from individuals who may be tempted to take on bigger financial risks. Since market participants aim to avoid financial losses at all costs, the self-control bias aims to protect the financial assets of an individual (Ferreira, 2018:45). Therefore, the policyholder will generally experience self-control bias by being extra cautious when making any decision affecting their insured assets and taking minimum risks. Table 3.5 highlights the behavioural finance biases in the context of insurance policyholders.

3.4.3.6 Availability bias

As stated by Quiggin (1994) availability bias is a processing of information bias where the easily recalled information is used by the insurance policyholder as the most accurate. Hence, for insurance policyholders to avoid losses in pertaining to their policies they insure at a company based on their instincts and what they recall rather than information provided by the insurer.

3.4.3.7 Overconfidence bias

The overconfidence bias was defined by Ricciardi and Simon (2000) as the cognitive bias of individuals that causes them to solely rely on their own judgement when making financial decisions. Therefore, insurance policyholders subject to the overconfidence bias will base financial decisions on their own analysis rather than the premiums and benefits provided by the insurance company.

3.4.3.8 Gambler's fallacy

Gambler's fallacy refers to the information and processing bias that the outcome of an event is dependent on the outcome of previous events or market predictions (Ricciardi, 2004). Hence

insurance policyholders subject to this bias tend to base their financial decisions on future market predictions.

3.4.3.9 Mental accounting

The mental accounting bias was defined by Ricciardi (2004) as cognitive bias causing individuals to segment information into separate mental accounts. Hence, insurance policyholders subject to this bias would rather forfeit a lower premium for more cover or forfeit a higher premium for less cover.

Table 3. 3: Behavioural finance biases in the context of insurance policyholders

Theory	Explanation	Source
Representativeness	It means the insurance policyholder will base financial decisions on past events of insurance.	Tversky and Kahneman, 1971; Ricciardi and Simon, 2001
Framing	Insurance policyholders give an extreme response to losses than gains and rely on a single piece of information in order to make financial decisions.	Tversky and Kahneman, 1971; Ricciardi and Simon, 2001; Duchon <i>et al.</i> , 1999
Loss aversion	Insurance policyholders will tend to stick to their initial insurance cover instead of altering it during certain events.	Ricciardi, 2004; Singh, 2012
Regret aversion	Insurance policyholders make inaccurate decisions based on past events to avoid feelings of regret or grief.	Quiggin, 1994
Self-control	Insurance policyholders will exert self-control in order to avoid large losses.	Dickason, 2017; Ferreira, 2018
Availability bias	Insurance policyholders will base financial decisions on currently available information.	Ricciardi, 2004
Overconfidence bias	Insurance policyholders make decisions based on their superior financial knowledge.	Ricciardi and Simon, 2001
Gambler's fallacy	Insurance policyholders will base their insurance decisions on future market predictions.	Ricciardi, 2004; Singh, 2012
Mental accounting	Insurance policyholders will trust their own analysis over	Tversky and Kahneman, 1971

	premiums and benefits of the insurance policy.	
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Source: Author compilation

3.4.4 The link between risk perception and the external environment

According to Mason (2008), the external environment refers to the factors occurring outside that influence the operation of the market. In most cases, businesses have no power over the external environment; however, they can respond to the external environment to maintain the flow of its operations (Kowo *et al.*, 2018). Similarly, Musa (2015) defined the external environment as the political and social conditions that influence an organisation and the citizens of a country. Mason (2008) stipulates that although the external environment occurs outside an organisation and its stakeholders, it can significantly impact the organisation and individuals in the long term.

According to Ricciardi (2004), the external environment can significantly influence individuals' financial behaviour, causing them to have a certain perception of risk. Garling, Kirchler and Lewis (2009) investigated the 2008 financial crisis and found that young people are more flexible towards risk than older people. However, older people who have experienced economic downturns in the past are more risk-averse and tend to be more alert and updated about current market fluctuations. According to a study by Ward and Zurbruegg (2002), political circumstances influence the risk perception of individuals. The study shows that individuals who consider political circumstances when making a financial decision tend to be more averse to risk. Such individuals tend to exhibit low tolerance towards risk affecting their possessions.

Also, market fluctuations may influence the decisions people make concerning their possessions. The most recent being COVID-19, a flu-like virus that affected the global economy. The end of 2019 marked the beginning of a new way of life for the entire world as a global pandemic took the world by surprise (World Bank, 2020). The markets showed huge shock, causing many people to lose money. Several businesses completely closed down due to a lack of proper investment in risk management strategies (PwC, 2020). According to OECD (2020), the world shook, and the coronavirus effects will be felt through many more years to come.

According to WHO (2020), people who have life insurance wonder whether their insurance policies cover deaths caused by coronavirus. Some are concerned about the financial stability of the insurance companies they have invested their money in. Howard (2020) stated that policyholders show concern because most covers currently exclude COVID-19. Individuals, therefore, become more inclined to consider these circumstances when taking out insurance. World Bank (2020) states that much of the concern stems from the fear that insurers will be negatively affected since they provide coverage for claims for death, health, and other contingencies. Concerning the policyholders of life and health insurance, pandemics are the most important to consider. However, the risk tolerance of insurers shows that since 1918 pandemics are a one in 30-year events, and those with short-term insurance tend to be less concerned about pandemics as they are usually incorporated in insurance policies (World Bank, 2020)

For individuals with life or health insurance policies, the increase in deaths may result in an increase in the costs associated with providing for the benefits that come with each claim than previously anticipated (Howards, 2020). This intensifies the risk perceptions of such individuals as the uncertainty about their insurance covers increases. In contrast, for non-life insurance policyholders, the concerns are somewhat less predictable. Policies such as liability insurance and motor vehicle insurance tend to exclude pandemics (OECD, 2020). As such, COVID-19 was not covered by most non-life insurance policies from the early 2000s. Nonetheless, to a certain extent, the impact depends on the precise definitions stipulated in the contract. Moreover, insurers expect to be hit by high demand for insurance pay-outs if product cancellations and surrenders increase due to the inability to pay premiums (BIS, 2020).

Lastly, Hang *et al.* (2018) established that high market fluctuations cause people to take more calculated risks concerning financial decisions. For policyholders, many tend to increase their premiums to get a higher cover for fear of losing possessions (BIS, 2020). However, a few people are drawn to withdraw from the insurance policy completely due to fear that they will not be able to continue paying the insurance policy for the cover offered in exchange. Evidence from the 2008 global financial crisis shows that while high market fluctuations may cause people to make unexpected financial decisions, some people choose to continue with their initial financial decisions.

3.5 SYNOPSIS

The core focus of the study is to analyse the factors influencing the risk perception of insurance policyholders. Therefore, this chapter mainly focused on providing different definitions of what risk is and concluded that people take out insurance to deal with the risks they face. Moreover, the influence of demographics, financial well-being, behavioural finance, and the external environment on risk perception was outlined in this chapter.

Within this chapter, subject matters were discussed to set the study's literature review in line with the objectives set in Chapter 1. The subject matters include perception (Section 3.2) with specific reference to the definition (Section 3.2). Highlighted in Section 3.3 is the definitions of risk perception. Section 3.4.1 provides an overview of demographics and discusses the link between risk perception, risk tolerance and demographics. In Section 3.4.2 an outline of financial well-being, through the definition and the link between financial well-being and risk perception are given. Section 3.4.3 provides an overview of behavioural finance and its influence on risk perception. The chapter concludes with a discussion on the external environment (Section 3.4.4) and how it links with risk perception.

In the following chapter, Chapter 4, an analysis of the research methodology as outlined for the empirical portion of this research study is provided. The topics discussed in this chapter include formulating the research objectives and research design, research approach, data collection method, administration of the questionnaire, and primary data analysis and statistical analysis.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

Research design and methodology form a significant part of any research study because it provides a step-by-step process of transforming data into useful and meaningful information. Therefore, a research design is a framework that a researcher must follow to provide the process followed to acquire and analyse the data (Igwenagu, 2016). This chapter, therefore, focuses on the research design, data collection and the methods used to collect and analyse the data to produce meaningful results that can be used in future research studies. The research methodology also plays the fundamental role of achieving both the primary and empirical objectives of the research. The empirical objectives of this study are as follows:

- Determine how demographical factors influence the risk identification and risk perception of insurance policyholders;
- Determine the relationship of risk tolerance on risk perception of insurance policyholders;
- Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng; and
- Identifying the exogenous factors that influence risk perception of insurance policyholders in Gauteng.

This chapter provides a framework of how the sample is collected and subsequently analysed. Additionally, it describes the research methods that are appropriate to be included in the study. The first section of this chapter, Section 4.2, provides an outline of the research design. Section 4.3 describes the methodological research approach followed by the researcher. The sampling procedure is discussed in Section 4.4, which provides the appropriate sampling method followed in the study. Section 4.5 outlines the data collection method utilised in the study by describing how the questionnaire was administered. The preliminary data analysis for the study is discussed in Section 4.6, while Section 4.7 discusses the ethical considerations followed in the study. Lastly, Section 4.8 provides a conclusion to the chapter.

4.2 RESEARCH PARADIGM

Section 4.2, which focuses on the research design, ensures that the research objectives and hypotheses are achieved. According to Wiid and Diggines (2013:54), a research design ought to follow a well-structured plan which is essential for obtaining information required to structure and solve research problems (Malhotra, 2010). Four types of world paradigms can be

distinguished, namely positivist, constructivist, participatory, and pragmatist. The term paradigm refers to how people view the world and aids in understanding human experience (Kivunja & Kuyini, 2017:27). Table 4.1 below shows the paradigms and what characterises them.

Table 4. 1: Research paradigms

Types of research	Positivist	Constructivist	Participatory	Pragmatist
Method	Used in quantitative studies	Used in qualitative studies	Used in studies that are both qualitative and quantitative in nature.	Used in studies that are both qualitative and quantitative in nature.
Advantage	Reliability of research results	Follows an interactive form of data collection	Active participation can form meaningful results	Recognizes that no single perspective can give a clear picture of realities.
Disadvantage	Excludes the subjectivity of values and norms	Multiple participant meanings	The unwillingness of the participants to disclose personal perspectives	Results may be biased

Source: Schwandt (1994); Straub *et al.* (2005); Bergold & Thomas, 2012); Ferreira (2019).

Positivist assumes that something is meaningful and true regarding the nature of the social phenomenon being investigated (Scotland, 2012). In addition, Kaboub (2008) alluded that real events can be observed empirically with a positivist paradigm while being explained in logical analysis. The positivist worldview is associated with quantitative research, and it provides unbiased values because it is guided by the principle of objectivity (Straub *et al.*, 2005). According to Pham (2018), this paradigm assists positivist researchers to understand the sampling methods and questionnaires by empirical tests of the focus group. Therefore, this

makes insights provided by positivists more meaningful with higher quality and reliability (Cohen, 2007). A common challenge a positivistic paradigm faces is excluding the subjectivity of values and norms because it relies on rationality. However, it is worth concluding that the reliability of research results is one key strength of this approach.

The constructivist paradigm is mainly used in qualitative research studies (Ferreira, 2019). It portrays the idea that people develop their view of the world through experiencing things and deriving a certain perception based on those experiences (Wilson, 1996). This approach assumes that knowledge is constructed by individuals who are active in the research process. Additionally, Schwandt (1994) alluded that it is guided by the assumption that researchers should aim to understand the world of lived experiences from the perspective of people who live it. Overall, Muposhi (2015) asserts that since constructivism follows a more personal and interactive form of data collection, the core aim of the approach is not to predict people's experiences but to gauge and understand human behaviour. The next section describes the methodological research approach, which is important to understand the step-by-step process to acquire and test the sample.

According to Bergold and Thomas (2012:191), the participatory approach is particularly popular in qualitative research. A great willingness for the participants to disclose personal perspectives regarding a certain situation through their experiences is required in the participatory approach (Bergold & Thomas, 2012). According to Aspers & Corte (2019), individuals tend to open about their experiences concerning certain subjects, such as politics, to their close friends and tend to be closed off towards strangers. This is because individuals fear being attacked for having a contradictory opinion to what is socially applicable (Yang & Hinkle, 2012).

The pragmatist paradigm is a deconstructive paradigm that focuses on what works rather than what might be objectively true or real (Frey, 2018). It follows a mixed approach where qualitative and quantitative research is conducted simultaneously (Ferreira, 2019). According to Morgan (2014), this approach doubts that reality can ever be determined. Pragmatists believe that individuals are free to believe what they want, although some events are more likely than others. Johnson and Onwuegbuzie (2004) stated that this paradigm adopts both a biased and unbiased approach.

The four research paradigms all make different assumptions about research. Positivistic researchers believe that knowledge that is derived from direct observation is more realistic,

factual and trustworthy (Park *et al.*, 2020). Hence, this study follows the positivistic paradigm wherein the researcher analysed questionnaires of 350 respondents to acquire trustworthy information regarding the phenomena in question.

4.3 METHODOLOGICAL RESEARCH APPROACH

Researchers commonly resort to three research approaches which can either be a quantitative, qualitative or mixed methods research approach (Van Deventer, 2013). First, the qualitative research approach uses non-numerical data to understand participants' experiences and opinions regarding a specific subject (Leavy, 2017). This research approach mainly uses data in audio or video format to understand people's experiences, which can also be associated with the constructivist paradigm (Ferreira, 2019). According to Leavy (2017), marketers often use qualitative research when for the development of a new product. One notable strength of a qualitative research approach is that it provides individually unique information. However, a drawback is that data collection can be a tedious task for the researcher, and drawing meaningful results can be challenging (Creswell, 1998).

Second, the quantitative approach can be defined as the process of collecting quantifiable data and analysing numerical data to calculate trends and corrections between different variables (Maree *et al.*, 2011). A quantitative research approach aims to transform data into useful statistics. Moreover, it is associated with the positivist paradigm, which has been followed in this research study. This study follows a quantitative approach because it provides quantifiable results which are meaningful and accurate for a specified research population, which is a strength of this approach. A weakness of the quantitative approach is that it excludes the variables excluded in the model, and the results obtained from a quantitative approach tend to be generalised (Myers, 2013).

Lastly, the mixed methods approach combines both the qualitative and quantitative research approaches (Igwenagu, 2016). This research approach allows the researcher to utilise both methods simultaneously (Creswell & Plano Clark, 2011:39). A few advantages of this approach is that it provides better quality of results because it limits the disadvantages of the qualitative and quantitative approaches. According to Creswell (2014), the mixed approach also produces more accurate results by using individual information to add value to quantitative results. A disadvantage of using the mixed approach is that collecting data from the participants may be time-consuming for the researcher (Creswell, 2003). The three methods have been summarised in Table 4.2 below.

Table 4. 2: Research methods

Qualitative approach	Quantitative approach	Mixed methods approach
Used in case studies through video or voice interviews	Used in surveys	Used in both surveys and case studies
Associated with open-ended questions	Associated with close-ended questions and numeric data	Associated with both open and close-ended questions
Collects participants' meanings to be able to interpret their meaning	Identifies the relationships between variables to make conclusions	Uses both qualitative and quantitative data to make conclusions
It provides individually unique information	It provides quantifiable results which are meaningful and accurate for a specified research population	It provides better quality of results because by limiting the disadvantages of the qualitative and quantitative approaches
Collecting data and drawing conclusions can be tedious and challenging	It excludes the variables which have been excluded in the model	Collecting data may be a time-consuming task

Ultimately a quantitative research approach was followed in this study. The questionnaire utilised in this study includes a 46-item scale, which incorporated the literature underlying the subject. The sampling procedure used in this study is discussed in the following section.

4.4 SAMPLING PROCEDURE

According to Van Deventer (2013), the sampling procedure is essential in determining the method that represents the whole. Hair *et al.* (2008) further state that the sampling procedure is followed to determine that a portion of the entire population is represented in the data collected. Therefore, the sampling procedure includes defining the target population, selecting a data collection method, selecting a sample frame, selecting a sampling method, and specifying a sample size. The sampling procedure utilised in this study is discussed in the following sections.

4.4.1 Defining the target population

According to Bartlett *et al.* (2001), a target population refers to a collection of participants who have the same or similar characteristics of interest to the subject under review. Welman (2005)

further states that the target population must be accurately defined to evaluate which elements of the sample can and cannot be incorporated in the sample being studied to provide useful information. The target population of this study comprised individuals, both males and females, who have short and long-term insurance policies.

4.4.2 Sampling frame

Diedericks (2015) states that a sampling frame refers to a list of suitable elements to the target population chosen for a study. Iacobucci & Churchill (2010) elaborate that all relevant information should be gathered regarding the list of suitable details. The list often includes the telephone book or geographical maps to recognise the target population. The list should be complete to produce a representative sample (Diedericks, 2015). Therefore, the sample frame for this study consisted of short and long-term insurance policyholders from these companies registered in South Africa. Table 4.3 below contains a list of the insurers within South Africa.

Table 4. 3: List of insurance companies

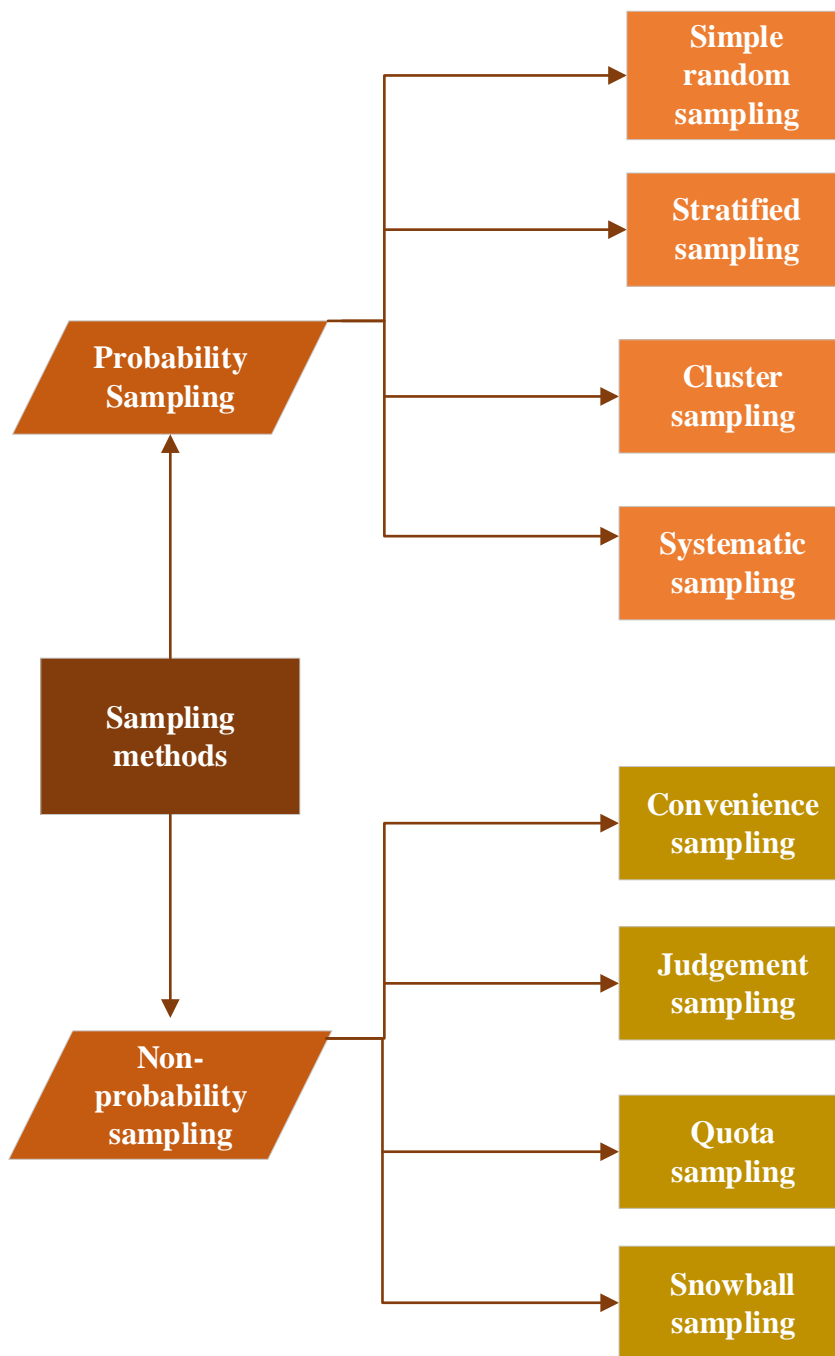
List of insurance companies	
ABSA Insurance Company Limited	Discovery Insure Limited
AIG South Africa Limited	First for Women Insurance Company (RF) Limited
Alexander Forbes Insurance Company Limited	The Hollard Insurance Company Limited
Allians Global Corporate	Momentum Insurance Company Limited
Bidvest Insurance Limited	Old Mutual Insure Limited
Bryte Insurance Company (RF) Limited	OUTsurance Insurance Company Limited
Clientele General Insurance Limited	Santam Limited
Hollard Insurance	Liberty Mutual insurance
Mutual and Federal Insurance	WesBank Insurance
Guard Risk Insurance	King Price Insurance
Standard Insurance Company Limited	MiWay Insurance
1 Life Direct Insurance	MMI Holdings Limited
SAGE Life	Clientele Life Insurance
Capital Alliance	Assupol Life
Metropolitan Life	Allan Gray Life
Zurich Insurance Company	AVBOB Mutual Insurance

Source: South African Insurance Association (SAIA) (2021)

4.4.3 Sampling method

For sampling to be effective an accurate sample should represent the population (Blanche *et al.*, 2006). A sampling method is, therefore, a technique used to draw a specific sample from the target population (Cant *et al.*, 2005). Figure 4.1 shows that there exist two major sampling methods, probability sampling methods and non-probability sampling methods.

Figure 4. 1: Sampling methods



Source: Taherdoost (2016)

Probability sampling is a sampling method with a non-zero chance of the target population being chosen (Diedericks, 2015). It consists of simple random sampling, stratified sampling, cluster sampling and systematic sampling. On the other hand, in a non-probability sampling

method, not every element has the chance of being selected to be included in the sample. It constitutes convenience sampling, judgement sampling, quota sampling and snowball sampling. Notably, the snowball sampling is a process whereby the researcher gradually acquires a large sample appropriate for the study through contacts and references that are not easy to acquire (Blanche *et al.*, 2006).

The technique used in this study was a non-probability snowball sampling method to exclude those who did not meet the criteria of the sample, which required individuals to have:

- An existing insurance policy;
- 18 years or older; and
- Should be currently residing in Gauteng.

4.4.4 Sample size

The sample size is an important section of the sampling procedure because it states the number of elements included in the research study (Malhotra, 2010). In order to produce precise results that are statistically significant, the sample size must be large enough to make this possible (Remler & Van Ryzin, 2011). To determine the correct sample size to use for a study, Struwig and Stead (2010) suggest utilising the sample size used in similar studies. Moreover, MacCallum and Widaman (1999) advised that a sample should be greater than 300 to produce meaningful results. Therefore, for this study, a sample consisting of 350 insurance policyholders was obtained. The sample size selected was in the range of other research studies conducted by Kunle *et al.* (2018:285-290) (sample size of 305), Abass (2018) (sample size of 350) and State of California Department of Insurance (2018) (sample size of 300).

Additionally, the requirements for factor analysis were also used to determine the sample size. In factor analysis, a ratio of at least five items is required. In this study, the sample size of 348 yielded a ratio of six items for each variable. Hence, a sample of 350 insurance policyholders was chosen for this study.

4.5 DATA COLLECTION METHOD

Data collection involves the use of different methods to obtain data (Quinlan *et al.*, 2015). The data collection method for a research study must be carefully chosen to properly represent the sample and collect the data in a reliable manner (McDaniel & Gates, 2007). Moreover, Asiamah *et al.* (2017) highlight that a researcher could incur avoidable costs by choosing a data

collection method not best suited for the study. There exist two methods of data collection, namely, the observation and survey methods.

The observation method is a process of collecting data that is commonly used in qualitative research (Kabir, 2016). It is a technique used by researchers whereby a researcher observes the behaviours of the target population to collect data. The participants' behaviours are observed through a sound recorder or video recorder organised by the researcher (Asiamah *et al.*, 2017). Struwig and Stead (2010) highlight a drawback of this method, the behaviours of the participants may be influenced by the interviewer presence, thus producing unreliable results.

The survey method is commonly used in quantitative research studies (Taherdoost, 2016). This method involves using a self-structured questionnaire to gather information from the participants. The data were collected using the survey method which includes online, face to face, telephone and drop-off surveys. Quinlan *et al.* (2015:268) highlight that the survey method is often used in collecting primary data. Due to COVID-19 regulations, the method of collecting data chosen for this study was online surveys. The online survey method was chosen for individuals with access to the internet, and assistance was given to individuals without internet access and individuals who were not computer literate. According to Cant *et al.* (2011), with online questionnaires, the participant is more inclined to complete the questionnaire accurately and truthfully in the absence of the interviewer. Therefore, the interviewer utilised QuestionPro to create the online questionnaire and the responses were received anonymously. The next section will discuss the questionnaire used in this research study.

4.5.1 Questionnaire design

According to Pallant (2007), the design of the questionnaire plays a significant role in ensuring that the research questions are correctly answered. A properly structured questionnaire is clear and does not mislead the participants when answering the questions. A poorly designed questionnaire can be hard to understand and can result in incomplete information (Cant *et al.*, 2005). Hair *et al.* (2008), Struwig and Stead (2010:91) and Quinlan *et al.* (2015:275) recommend following guidelines below when designing a good questionnaire:

- Include a short cover letter;
- State the purpose of the study;
- State that the answers will be confidential;
- Avoid leading questions;
- Ensure questions are unambiguous;

- Limit items to 100; and
- Thank the participants for completing the questionnaire.

Within the questionnaire design, the purpose of the study should be stated clearly in a short cover letter to ensure that the participants are clear about the purpose and willing to partake in the study. The cover letter should also guarantee the participant that the responses are confidential, entirely voluntary, provide contact details if questions arise and thank the participants for the time taken to complete the questionnaire. Additionally, Diedericks (2015) highlights that the cover letter must not exceed one page. According to Van Deventer (2013), care must be taken to ensure that the questionnaire does not contain leading questions that prompt the participant a specific answer. Moreover, the questions should not be ambiguous as this can confuse the participants when answering the questionnaire.

The guidelines mentioned above were followed in designing the questionnaire used in this study. The questionnaire was designed to ensure participants above 18 years old understood the purpose of the questionnaire. To avoid non-response errors, if the participant did not answer a question fully, they could not proceed to the next question. The questionnaire could be completed within an average time of 15 minutes. Annexure A presents the questionnaire used in this study.

4.5.2 Questionnaire format

The questionnaire format shows the structure of the questions. This study utilised a structured questionnaire which constitutes a 46-item scale analysing the factors influencing the risk perceptions of insurance policyholders. The two types of scales used in this study are interval and ordinal scales. An interval scale includes a numerical scale where numbers are used to indicate the responses. On the other hand, an ordinal scale includes the Likert scale where the questions may be negatively or positively constructed with response categories ranging from strongly agree to strongly disagree. Researchers commonly use five categories; however, it can be more than five (Quinlan *et al.*, 2015).

According to Bell (2005), questions can either be close-ended or open-ended. Close-ended questions are structured and are quick and easy to answer (Hyman & Sierra, 2016). Close-ended questions also require the participant to give a definite answer from the set of questions. The given options also make it less difficult for the participants to answer sensitive questions (Hyman & Sierra, 2016). On the other hand, open-ended questions are unstructured and more complicated to analyse. Open-ended questions are often more difficult to answer than close-

ended questions (Hyman & Sierra, 2016). These types of questions require more thought, and the participant is given a blank space to fill in an honest answer in more detail (Maree *et al.*, 2011). This study utilised five open-ended questions, where the participants were asked to indicate their ethnicity, highest level of education, employment status, religion and the type of policy held apart from the options given.

The questionnaire also incorporated dichotomous and multiple-choice questions. Dichotomous questions give the participants two options which can either be yes or no, as depicted in the screening questions of the questionnaire (Kabir, 2016). This study utilised five dichotomous questions. On the other hand, the 23 multiple choice questions provide a range of possible answers, three or more. Chapter 2 and Chapter 3 provided a guide to which the questionnaire was structured. The relevant scales were also utilised in the study to answer the questions. The next section provides a layout of the questionnaire.

4.5.3 Questionnaire layout

The layout of the questionnaire must be structured logically structured because the lack thereof can negatively impact data collection (Ferreira, 2019). Participants can lack interest in completing the questionnaire if it is not properly structured. The questionnaire should include simple questions that are easy to read and quick for the participants to answer without hesitation (Maree *et al.*, 2011). The questionnaire has been attached in Annexure A.

According to Maree *et al.* (2011), the first stage is to acquire demographic information for studies using primary data, which is a significant part of the study. This is because demographic information indicates whether the target population has been correctly represented (Hammer, 2011). Moreover, from the demographic information, several relationships can be determined with the other factors being analysed in the study. The second stage involves collecting information that is directly related to the study's objectives to answer the research questions (Byrne & Brooks, 2008).

Table 4. 4: Layout of the questionnaire

Section	Source	Objective	Type and measure of question
Section A - Demographic information & Socio-Cultural information(A1-A16)	Derived from theory.	The objective is to determine if demographic factors influence the risk perception of	Close and open-ended questions where relevant answers were provided and a blank space to fill in

		insurance policyholders.	relevant answers were provided.
Section B- Financial well-being (B1-B9)	Flynn <i>et al.</i> (1994) Grable and Lytton (2001)	Assess the impact of financial well-being on the risk perception of insurance policyholders	Close-ended questions where participants had to choose one of four questions.
Section C - Behavioural finance biases (C1-C9)	Ricciardi (2008)	Establish and analyse the influence of behavioural finance biases that influence the risk perception of insurance policyholders	A six-point Likert scale was utilised (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree and (6) strongly agree.
Section D - Risk identification (D1-D10)	Manez <i>et al.</i> (2018:53)	To determine policyholders' understanding of risk.	A six-point Likert scale was u (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree and (6) strongly agree.
Section E – DOSPERT scale (E1-E22)	Weber <i>et al.</i> (2002)	Establishing a theoretical link between risk perception of insurance policyholders and their behaviour towards risk	A six-point Likert scale was utilised (1) very unlikely, (2) unlikely, (3) somewhat unlikely, (4) somewhat likely, (5) likely and (6) very likely.
Risk tolerance scale (E23)	Grable and Lytton (1998)	Determine the relationship of risk tolerance on risk perception of insurance policyholders	Close-ended questions where relevant answers were provided.
Section F - External or international events (F1-F16)	Ricciardi (2004)	Identifying the link between the current economic and political landscape in South Africa and risk perceptions	A six-point Likert scale was utilised (1) very unlikely, (2) unlikely, (3) somewhat unlikely, (4) somewhat likely, (5) likely and (6) very likely.

Source: Author compilation

As shown in Table 4.4, the questionnaire was divided into six sections, namely Section A, Section B, Section C, Section D, Section E and Section F. It is important to note that the DOSPERT Scale is a verified scale (Weber, Blais & Betz, 2002). The following section discusses the methods used in the pretesting of the questionnaire after it was designed and formatted accordingly.

4.5.4 Pre-testing the questionnaire

According to Iacobucci and Churchill (2010:222), a pre-test of the questionnaire must be conducted for the researcher to know how the participants will handle the questionnaire. The purpose of the pre-test is to ensure that there are no grammatical errors, participants fully understand the instructions and gauge the average time spent per questionnaire. Sreejesh *et al.* (2014) highlight that if the questionnaire contains a lot of grammatical errors or is too long, it may discourage the participants from giving honest answers, and it may always discourage the participants from completing the questionnaire at hand.

This study utilised an online questionnaire that was pre-tested by ten individuals. The sample consisted of policyholders who are currently residing in Gauteng and are above 18 years of age. In order to ensure that all the participants understood the questionnaire at the same level, three of the individuals were students, five were employed, and the other two were unemployed. Moreover, because Gauteng is the most diverse province in South Africa, the pre-test incorporated all the different ethnic groups to ensure all the ethnic groups understood the questionnaire. Ultimately, the average time to complete the questionnaire by all 10 participants was 15 minutes. Hinkin (1998) stated that the average time to complete a questionnaire must be 15 minutes to ensure the participants fully answer the questionnaire and give honest feedback.

4.5.5 Administration of the questionnaire

Feedback received from the pre-test included grammatical adjustments, technical errors and eliminating certain questions. Overall, adjustments were made, and the final questionnaire, including the cover letter, was distributed to participants (Annexure A). The final questionnaire was successfully distributed from June 2020 until June 2021 to reach a sample size of 350 on QuestionPro, which relates to previous studies.

4.6 PRELIMINARY DATA ANALYSIS

According to Malhotra *et al.* (2012), preliminary data analysis is the starting point before a researcher looks into further statistical analysis. The main purpose of preliminary data analysis

is to prepare the data for further analysis, identify key features and summarise it to form a meaningful analysis (Wallace *et al.*, 2011). The analysis of preliminary data includes the process of gathering data and coding which are discussed in the following subsections.

4.6.1 Data gathering process

From a total of 546 distributed questionnaires, a final sample of 341 was included in the study. The cover letter was included in the questionnaire, which gave a brief description of what the study was about and highlighted that participation was voluntary and participants were free to accept or decline to partake in the study. The questionnaire was administered online, and the final sample excluded individuals who did not meet the inclusion criteria required, incomplete questionnaires, and any errors that were present. A total of 341 questionnaires out of 546 were included in the final sample, with a response rate of 62.5 percent.

4.6.2 Coding

According to Linneberg and Korsgaard (2019), coding is a research process whereby the researcher transforms raw data and groups it to form meaningful categories. Wiid and Diggins (2013) further highlight that when coding, numbers are assigned to specific items to derive cohesive information into a computer and tabulate the results. The survey questionnaire in this study was divided into six sections. Section A consists of 16 questions aimed at obtaining demographic information of the participants. The questions included age, gender, income and race, amongst others. Section B contained nine items with the purpose to obtain information regarding the financial well-being of the participants. In Section C, nine items on a six-point Likert scale were used to determine the level of behavioural finance biases of the participants, where the participants were required to select the level to which they agree or disagree with the statements. Section D consists of ten items aimed at identifying the participants' risk perception. In Section E, a 23 item DOSPERT scale was used to identify the participants' risk perception scale relating to ethical, financial, health, social and recreational and the risk tolerance scale. Lastly, Section F consisted of 16 items to determine how the participants relate to external or international events.

Moreover, Iacobucci & Churchill (2010:350) highlighted that once the data has been collected, it is not useful until it is transformed into a format that will yield a meaningful analysis. This form of data analysis can be performed in three steps namely, editing, coding and tabulation (Creswell & Plano Clark, 2011). Cant *et al.* (2005) highlight that editing involves analysing the questionnaire to ensure there are no omissions, ambiguities and repetition of questions.

Moreover, Zikmund and Babin (2013) highlight that coding must be performed on the data to ensure its usefulness before interpreting it. This can be done by assigning symbols to each question or a group of questions relating to the same topic (Iacobucci & Churchill, 2010). Lastly, tabulation involves arranging the responses in a table form to acquire the frequencies per question (Hair *et al.*, 2008).

Table 4. 5: Coding of data

Data type	Code	Question
Demographic information	A1-A16	Section A: Questions A1-A16
Financial well-being	B1-B9	Section B: Questions B1-B9
Behavioural finance biases	C1-C9	Section C: Questions C1-C9
Risk identification	D1-D10	Section D: Questions D1-D10
Risk perception scale	E1-E22	Section E: Questions E1-E22
Ethical	E1-E3	Section E: Items E1-E3
Financial	E4-E7	Section E: Items E4-E7
Health/safety	E8-E11	Section E: Items E8-E11
Social	E12-E15	Section E: Items E12-E15
Recreational	E16-E19	Section E: Items E16-E19
Insurance perception	E20-E22	Section E: Items E20-E22

Risk tolerance scale	E23	Section E: Item E23
External events	F1-F16	Section F: Items F1-F16
Political-legal	F1-F3	Section F: Items F1-F3
Market fluctuations	F4-F9	Section F: Items F4-F9
Crime	F10-F13	Section F: Items F10-F13
Unemployment	F14-F16	Section F: Items F14-F16

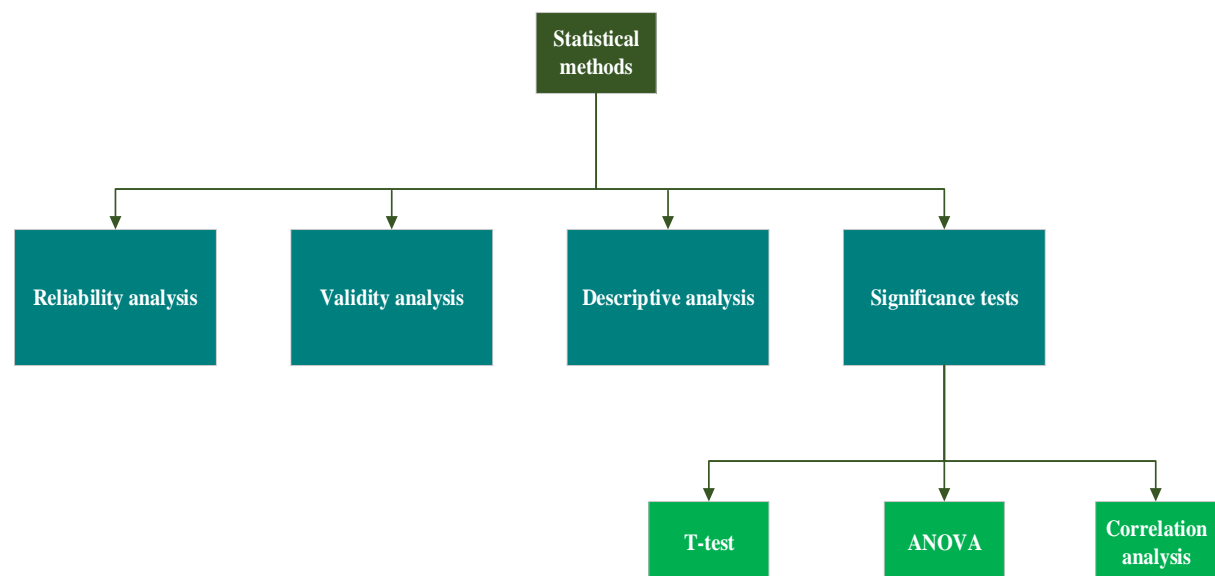
Source: Author compilation

The data was captured and coded electronically to minimise errors as shown in Table 4.5. The codebook is presented in Annexure B. In order to present the data obtained from the questionnaire, the next section discusses the statistical analysis techniques.

4.7 STATISTICAL ANALYSIS

The data received from questionnaires is not useful to researchers because no correlations or conclusions can be generated from the data until it is transformed (Berndt & Petzer, 2011). According to Swanepoel *et al.* (2006) in order to make sense of the data, statistics must be utilised. The quantitative data collected for this study were analysed using the Statistical Package for Social Sciences (SPSS) version 27 for Microsoft Windows. The following statistical techniques were used on the data sets:

Figure 4. 2: Statistical methods



Source: Ghoojani (2018)

The statistical methods depicted above are described in the subsequent sections.

4.7.1 Reliability analysis

According to Quinlan (2011:306), a reliability test is conducted to determine if the variables do not contain random errors. Therefore, Hair *et al.* (2010) define reliability as the process of repeating trials to test if it produces the same or similar results. Therefore, a measure is considered reliable if it produces the same outcome when tested repeatedly (Schiffman *et al.*, 2010:58). Similarly, reliability is characterised as a high-quality measurement to deem a research study trustworthy (Cant *et al.*, 2005). Moreover, a reliability test is utilised to test whether or not the data is free from random errors. Cant *et al.* (2005) state that should any random errors be found in a study, it can be concluded that it is inefficient.

There are three approaches to achieving reliability namely, test-retest reliability, alternative forms reliability and internal consistency reliability. According to Iacobucci & Churchill (2010), test-retest reliability involves the administration of a similar scale on two separate observations at different points. The reliability method aims to determine whether differences exist between scores from the two separate observations. The presence of differences between the two observations indicates a random error. The alternative forms reliability requires that the same forms be administered to the same participants at two different times (Malhotra, 2010). This method measures how the observations are correlated, although measured differently and at different times. Test-retest reliability and alternative forms reliability are time-consuming and expensive; therefore, they were not used in this study. The internal consistency reliability measures the consistency of the set items when summated to make the complete scale (Quinlan *et al.*, 2015:113). The most common measure of internal consistency reliability is the Cronbach alpha which measures the average correlation between the summated items that make up the complete scale. The scale is considered reliable through the value of alpha, which ranges from zero to one, where zero represents a complete random error, and one represents no random error.

4.7.2 Validity analysis

According to Hair *et al.* (2013:166) and Pallant (2008:7), a measure is considered valid if it measures the scale it is intended to measure. In addition, validity can determine the extent to which dissimilarities in the observed data can reveal actual dissimilarities of the characteristics

under consideration rather than a random error. According to Maree (2011), when measuring validity, there are three guidelines to consider amongst others. Firstly, the measuring instrument cannot be valid if it is not reliable. Secondly, participants can answer the questionnaire in a way they think they are supposed to answer, which they consider to be socially correct. Thirdly, the participants can be biased by answering yes to all the questions.

There are three main types of methods used by researchers to validate their studies (Goundar, 2012). These methods include content validity, construct validity and criterion validity. Content validity is performed before data collection is performed to ensure that the items included accurately represent the topic in question (Hair 2013:167). In addition, Malhotra suggests that the scale items must be examined to determine whether they cover the entire domain. The questionnaire utilised in this study was checked and validated by the researcher and two study leaders.

Construct validity involves linking the measure to the theoretical foundations in a study (McDaniel & Gates, 2012). This suggests that the results provided by the measure should have a strong linkage with the theory underlying the study (Malhotra, 2010). In other words, there should be a close correlation between the results and theoretical grounds (Quinlan 2011). Zikmund and Babin (2013) highlight that validity consists of convergent, discriminant and nomological validity. Convergent validity is the degree to which the measured variable correlates with other variables measuring the same theoretical variable (Iacobucci & Churchill, 2010). Discriminant validity refers to the degree to which the measured variable does not correlate with other measured variables measuring the theoretical variable. Lastly, nomological validity measures the level of correlation between different constructs and the theoretical variable (Remler & Van Ryzin, 2011).

Criterion validity is considered to be significantly important if it can measure the instrument it is expected to measure (Maree *et al.*, 2011). Additionally, Hair *et al.* (2013) define criterion validity as the level of correlation between self-report measures and behavioural variables in the study. Criterion validity constitutes predictive and concurrent validity. Predictive validity is a measure that predicts future performance, whereas concurrent validity is a measure that determines the degree to which a self-report measure correlates with a certain behaviour measured at the same time (Jackson, 2008).

For this study, the construct validity was utilised using the most accurate index, Cronbach alpha. Content validity was also followed through the inclusion of open-ended questions in the questionnaire. The following section discusses the descriptive analysis followed in the study.

4.7.3 Descriptive statistics

According to Churchill and Brown (2004), descriptive analysis is the simplifying organising and interpreting of data to provide a meaningful analysis. Quilan (2011) further highlights that data in the form of age, gender, race and income can be expressed in ratios, averages, summations and standard deviation using descriptive statistics. This study utilised measures of central tendency, dispersion and shape as the three classifications of descriptive statistics.

4.7.3.1 Measures of central tendency

This measure of central tendency consists of the mean, mode, and median. The mean can also be referred to as the average, which is the sum of all values divided by the number of the values (Kolb, 2008). The median is also known as the central point. It is determined by identifying the central point when the data is arranged in ascending or descending order. According to Maree (2011), the median is the 50th percentile in a data set and is suitable for ordinal data. The mode is the value that occurs more frequently within the data set (Struwig & Stead, 2010). Maree (2011) warns that the mode can be insufficient when measuring data because the data can have more than one value or characteristic that appears frequently.

4.7.3.2 Measures of dispersion

The measures of dispersion include the range, variance, and standard deviation. Unlike measures of location that focus on where the values are located, measures of dispersion focus examine the broadness of the data (Manikandan, 2011). The range is computed by subtracting the minimum value from the largest value to obtain the values between the largest and smallest values in a data set (Quinlan, 2011). On the other hand, the variance refers to the spread, thus, the degree to which the values differ from the arithmetic mean. Similar to variance, the standard deviation is the square root of the variance, referring to the spread in the data set. The standard deviation is the degree to which the average amount deviates from the arithmetic mean, that is, how much the data differs around the mean.

4.7.3.3 Measures of shape

The measures of shape include kurtosis and skewness, which are useful when analysing the nature of distribution (Petar & Sanja, 2010). The distribution of the data can be measured through a graphic presentation (Pallant, 2007). According to Quinlan (2011), kurtosis measures

flatness or peakedness of the data distribution. When the distribution is flatter than normal, kurtosis is negative, and when kurtosis has a zero value, the distribution signifies a normal distribution that is peaked (Malhotra, 2010). Skewness is a measure of asymmetry in distribution. In other words, skewness is the unequal distribution of the mean, mode, and median (Diedericks, 2015). According to Swanepoel (2006), distribution is skewed to the right when it is positively distributed, while distribution is skewed to the left when it is negatively distributed.

This study employed descriptive statistics to determine the overall pattern and distribution of the data and determine the participants' characteristics. Overall, the descriptive statistics used in this study consist of mean, mode, median, standard deviation, skewness and kurtosis. The subsequent section provides an overview of the correlation analysis followed in this study.

4.7.4 Correlation analysis

Correlation analysis measures how two or more variables are associated with each other (Iacobucci & Churchill 2010). Quinlan (2011:400) adds to this definition by stating that correlation is a single number that describes the strength and direction of the relationship between two or more variables. The most commonly used measure of correlation in SPSS is the Pearson correlation coefficient (r). This coefficient measures the strength and direction of how two or more variables are related (Kumar *et al.*, 2002). Pallant (2013) further highlights that the Pearson correlation coefficient can be used in one continuous or dichotomous variable. On the other hand, the Spearman rank-order correlation is a non-parametric measure of the degree of association between two variables. The Pearson correlation coefficient utilises the range from -1 to 1 to determine the degree of association, with -1 indicating a negative correlation, 1 indicating a strong positive correlation and 0 indicating no correlation between the variables (McDaniel & Gates, 2007).

This study utilised both the Pearson and Spearman correlation to determine the relationship between the factors influencing the risk perception of insurance policyholders in Gauteng. The test of significance used in the study will be discussed in the following section.

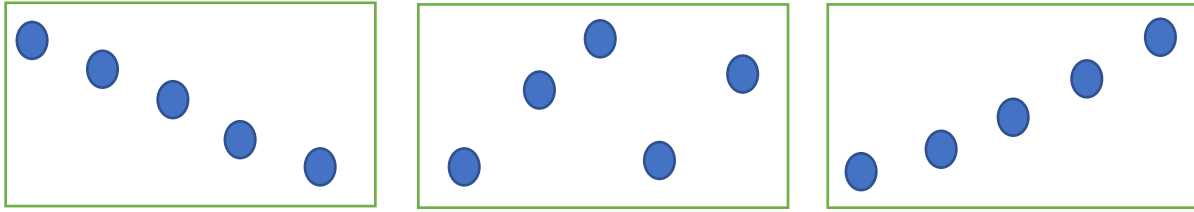
Figure 4.3 below shows the correlation coefficients using scatter plots.

Figure 4. 3: Correlation coefficients using scatter plots

$r = -1$

$r = 0$

$r = 1$



Source: Gujarati (2010)

4.7.5 Test of significance

The t-test is used to determine whether there is a significant difference between the arithmetic means of the two groups (Hair *et al.*, 2008). In other words, it tests whether the arithmetic means differ from each other (Quinlan, 2015). According to Brendt and Petzer (2011), the t-test is the total risk the researcher is willing to accept for the hypothesis under testing. When performing a test of significance, there must be a null and alternative hypothesis. The null hypothesis (H_0) resembles no variation between the different groups, while the alternative hypothesis (H_a) resembles variation between the groups. The p-values obtained from the t-test indicates whether or not the hypothesis can be supported. The t-test statistics were used to determine the differences in the perception of risk of insurance policyholders by males and females.

4.7.6 Analysis of variance (ANOVA)

McDaniel and Gates (2013) indicate that the analysis of variance (ANOVA) determines the differences in arithmetic means of more than two independent variables. It utilises the F-value and the p-value to explore whether the means are significantly different. The values provided by the F-value and p-value indicate the percentage that the variables are significantly different from each other. The ANOVA was utilised in this study to determine whether there were any statistically significant differences between the participants' perceptions of risk and demographics, risk tolerance, endogenous factors, financial well-being and behavioural finance, and exogenous factors.

4.7.7 Multiple linear regression

According to Quinlan (2011), a regression measures the degree to which one or more independent variables predict a dependent variable. This means that it tests whether there exists a positive or negative relationship between the independent variables and the dependent variable. A multiple linear regression was utilised in this study to determine whether there were any statistically significant differences between the participants' perceptions of risk and the

determinant factors, namely, demographics, risk tolerance, endogenous factors, financial well-being and behavioural finance, and exogenous factors.

The following section describes the highly ethical considerations that were followed in this study.

4.7.8 Outline of statistical techniques utilised

Table 4.4 below provides a summary of the statistical methods utilised to achieve the empirical objectives of the study.

Table 4. 6: Summary of statistical and inferential statistical methods utilised

Objective	Methods
Determine how demographic factors influence the risk identification and risk perceptions of insurance policyholders	Descriptive Correlation T-test ANOVA
Determine the relationship of risk tolerance on risk perception of insurance policyholders	Descriptive Correlation
Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng	Correlation Regression
Identifying the exogenous factors that influence risk perception of insurance policyholders in Gauteng	Correlation Regression

Source: Author compilation

4.8 ETHICAL CONSIDERATIONS

Parveen and Showkat (2017) define ethics as the moral principles guiding humanity. In research, ethics must be conducted to distinguish between what is socially acceptable and what is not (Redda, 2015). Ferreira (2019) suggests that the researcher must ethically collect data as set by North-West University. This study obtained ethical clearance from the Research Committee of Economic and Management Sciences in 2020, attached in Annexure C. Ethical clearance number NWU-00720-20-A4 was obtained from North-West University.

The following ethical considerations were taken into account during the data collection of the study:

- Voluntary participation: The participants were well informed about their right to withdraw from partaking in the study;
- The anonymity of responses: The personal information of participants who partook in the study was collected anonymously and only used for the research study;

- A true reflection of information: The information collected for the study was not ascribed to an individual and was used accurately for the research study; and
- Management of data obtained: The data collected from this study will be kept for no more than five years.

4.9 SYNOPSIS

This chapter explored the research methodology filled within this study. This was done to form a basis for empirical objectives to be tested and analysed to formulate meaningful conclusions. This chapter discussed the research design and research approach. It further discussed the sampling procedure by defining the target population and establishing the sample frame, method, and frame. The data collection method followed made special reference to how the questionnaire was designed and administered to the participants. It was concluded that a non-probability snowball sampling method is to be followed in this study to reach the number of participants required for this study. A preliminary data analysis was conducted, which included coding of the data to provide meaningful data analysis. In addition, the importance of statistical analysis was outlined in the study. This included reliability, validity analysis, and correlation analysis of the data. The last section focused on the ethical considerations that reassured the participants that taking part in the survey was voluntary and anonymous.

The questionnaire was administered to individuals residing in Gauteng who had an existing insurance policy. The information provided by this chapter forms the basis for Chapter 5, which provides the results, conclusions, and recommendations from the testing of the data.

CHAPTER 5: ANALYSIS AND INTERPRETATION OF EMPIRICAL FINDINGS

5.1 INTRODUCTION

Primarily, this study aimed to analyse the factors influencing the risk perception of insurance policyholders. This chapter outlays the results of the empirical objectives as provided in Chapter 1:

- Determine how demographical factors influence the risk identification and risk perception of insurance policyholders;
- Determine the relationship of risk tolerance on risk perception of insurance policyholders;
- Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng; and
- Identifying the exogenous factors that influence risk perception of insurance policyholders in Gauteng.

In order to ensure that the primary and empirical objectives are achieved, several sections have been set out in this chapter to discuss the analysis and interpretation of the empirical findings. This is set out in the chapter as follows:

- The descriptive analysis of the demographics, risk tolerance, endogenous and exogenous factors of insurance policyholders living in Gauteng is provided in sections 5.2 and 5.3.
- Section 5.4 elaborates on the exploratory factor analysis conducted to identify what drives risk perception.
- Section 5.5 provides an outline of the hypothesis testing utilised to determine the significance of the study.
- Section 5.6 to 5.9 provide an analysis of each empirical objective.
- Section 5.10 expands on the analysis of the factors influencing risk perception of insurance policyholders in Gauteng, and a regression analysis thereof.

5.2 ANALYSIS OF DESCRIPTIVE INFORMATION

Table 5.1 below depicts the summary of demographic information of the final sample of 341 participants. The sections that follow give a detailed discussion of the results in Table 5.1.

Table 5. 1: Summary descriptive analysis

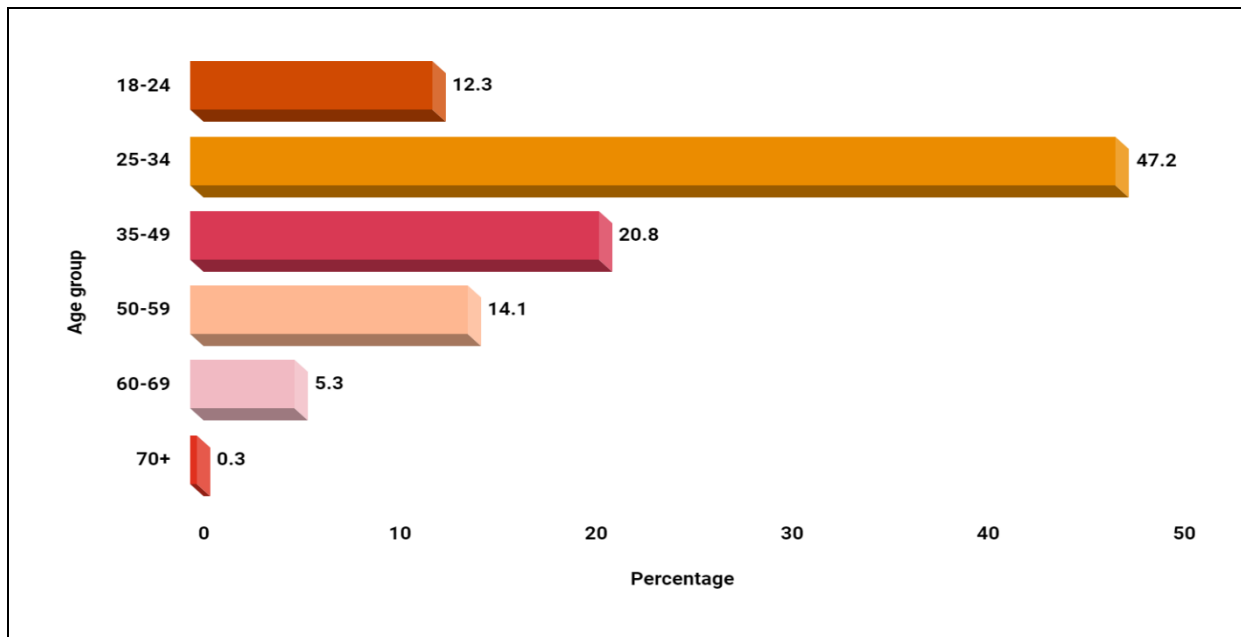
Item	Demographic variable	Characteristic	Frequency	Valid percentile
1	Age	18-24	42	12.3
		25-34	161	47.2
		35-49	71	20.8
		50-59	48	14.1
		60-69	18	5.3
		70+	1	0.3
2	Gender	Male	154	45.2
		Female	187	54.8
3	Ethnicity	African	252	73.9
		Asian	12	3.5
		Coloured	12	3.5
		White	65	19.1
4	Marital status	Single	156	45.7
		Common-law spouse	13	3.8
		Married	150	44.0
		Divorced	15	4.4
		Widowed	7	2.1
5	Highest level of education	No matric	3	0.9
		Matric	18	5.3
		Diploma	41	12.0
		Bachelor's degree	115	33.7
		Honours degree	119	34.9
		Master's degree	39	11.4
		Doctoral degree	4	1.2
		Other	2	0.6
6	Employment status	Student	9	2.6
		Salaried employed	265	77.7
		Self-employed	45	13.2
		Unemployed-not looking for work	1	0.3
		Unemployed- looking for work	8	2.3
		Homemaker	12	3.5
		Retired	1	0.3
7	Annual income	Below R 100 000	19	5.6
		R 100 001-200 000	29	8.5
		R 200 001-300 000	53	15.5
		R 300 001-400 000	85	24.9
		R 400 001-500 000	59	17.3
		R 500 001-600 000	41	12.0
		R 600 001-700 000	17	5.0
		R 700 001-800 000	14	4.1
		R 800 001-900 000	5	1.5
		R 900 001-R 1 million	8	2.3
		More than R 1 million	12	3.5
8	Income variability	My income is very stable & predictable	233	68.3
		My income is somewhat stable & predictable	79	23.2
		My income is fluctuating and unpredictable	29	8.5
9	Net worth	Less than R 1 million	254	74.5

		Between R1 million and R 3.5 million	76	22.3
		Between R3.5 million and R7 million	10	2.9
		Between R7 million and R12 million	1	0.3
		Between R12million and R30 million	0	
		R30 million and more	0	
10	Homeownership	Living with relatives	45	13.2
		Renting	132	38.7
		Homeownership with mortgage	116	34.0
		Homeownership without mortgage	48	14.1
11	Household size	1-2 individuals	194	56.9
		3-5 individuals	136	39.9
		6+ individuals	11	3.2
12	Number of dependants	0 dependants	105	30.8
		1-2 dependants	177	51.9
		3-5 dependants	56	16.4
		6+ dependants	3	0.9
13	Religion	None	12	3.5
		Buddhism	2	0.6
		Christianity	308	90.3
		Judaism	1	0.3
		Hinduism	5	1.5
		Islam	11	3.2
		Other	2	0.6
14	Health status	Poor	9	2.6
		Fair	46	13.5
		Good	171	50.1
		Excellent	115	33.7
15	Type of policy	Short-term insurance (car, home)	179	52.5
		Long-term insurance (life insurance)	58	17.0
		Both long-term and short-term insurance	103	30.2
		Other	1	0.3
16	Level of financial and insurance product knowledge	Little	27	7.9
		Average	166	48.7
		Above average	123	36.1
		Superior	25	7.3

5.2.1 Distribution of age

Table 5.1 illustrates the frequencies and valid percentiles of all demographic factors. In order to proceed with the questionnaire, the participants were required to disclose their age in terms of six categories. Most of the participants were between the age category of 25-34, representing 47.2 percent, followed by the 35-49 age group with 20.8 percent. As indicated in Table 5.1, the third biggest age group was between 18-24, representing 12.3 percent. The fourth age group was 50-59, which represented 14.1 percent and the smallest age group were older than 70 years, representing 0.3 percent.

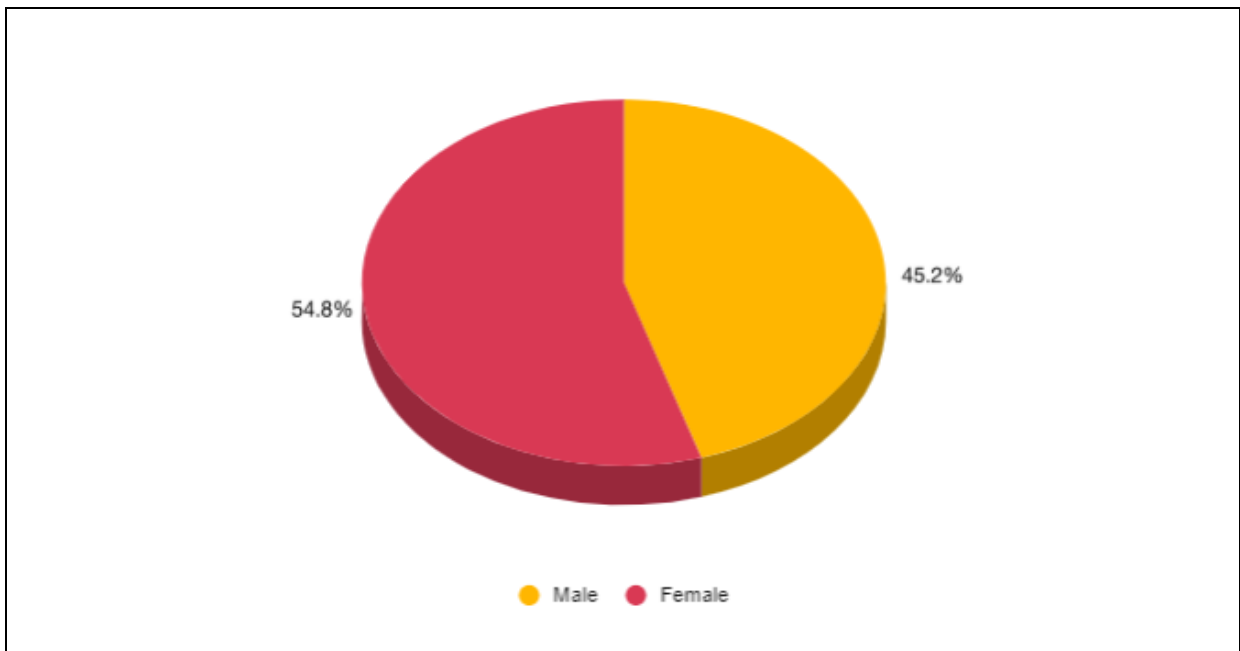
Figure 5. 1: Distribution of age



5.2.2 Composition of gender

As shown in Table 5.1, most participants are female, making 54.8 percent of insurance policyholders, while 45.2 percent is made up of male insurance policyholders.

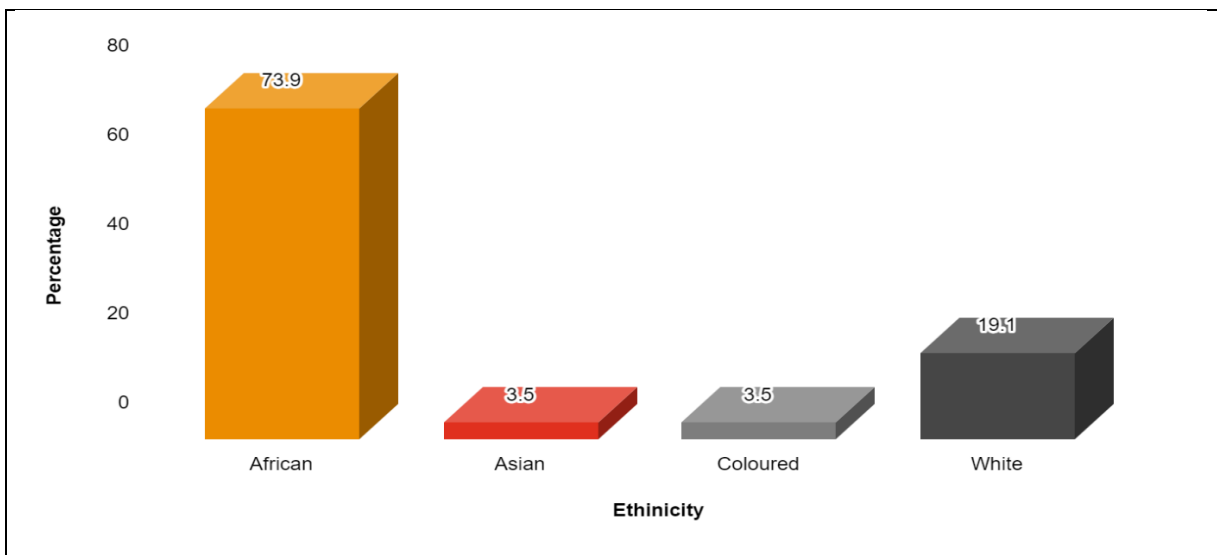
Figure 5. 2: Composition of gender



5.2.3 Composition of ethnicity

Figure 5.3 below depicts the ethnic composition of the sample. The majority of participants were African, representing 73.9 percent, followed by White representing 19.1 percent of insurance policyholders. Asian and Coloured participants each made up 3.5 percent of the insurance policyholders.

Figure 5. 3: Composition of ethnicity

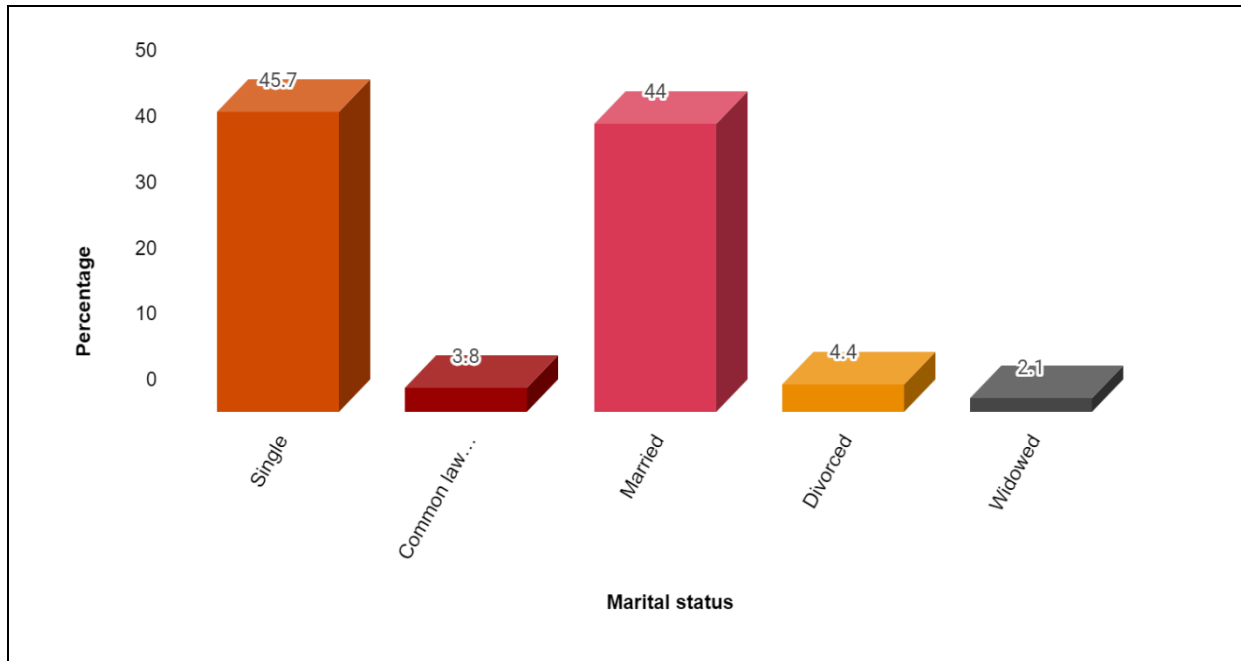


5.2.4 Marital status

As shown in Figure 5.4 below, the largest portion of the participants consisted of single and represented 45.7 percent, followed by married people with 44 percent. The third group of

participants were divorced and represented 4.4 percent, while 3.8 percent were participants with a common-law spouse. The remaining were widowed participants and made up 2.1 percent of insurance policyholders.

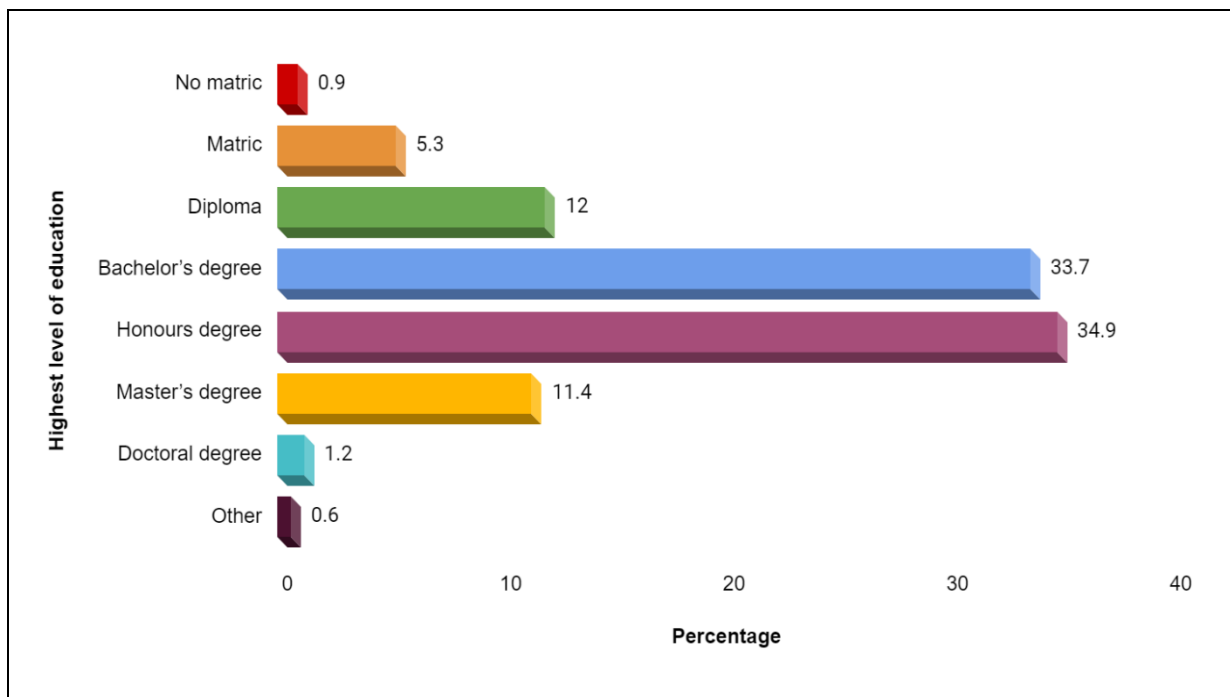
Figure 5. 4: Marital status



5.2.5 Highest level of education

Figure 5.5 depicts that most of the participants completed an honours degree, represented by 34.9 percent. This was closely followed by participants with a bachelor's degree that made up 33.7 percent. Participants with a diploma made up 12 percent of insurance policyholders, while 11.4 percent were participants with a master's degree. Participants with a doctoral degree, and no matric represented 1.2 percent and 0.9 percent, respectively. The remaining 0.2 percent were participants with other levels of education and represented 0.6 percent.

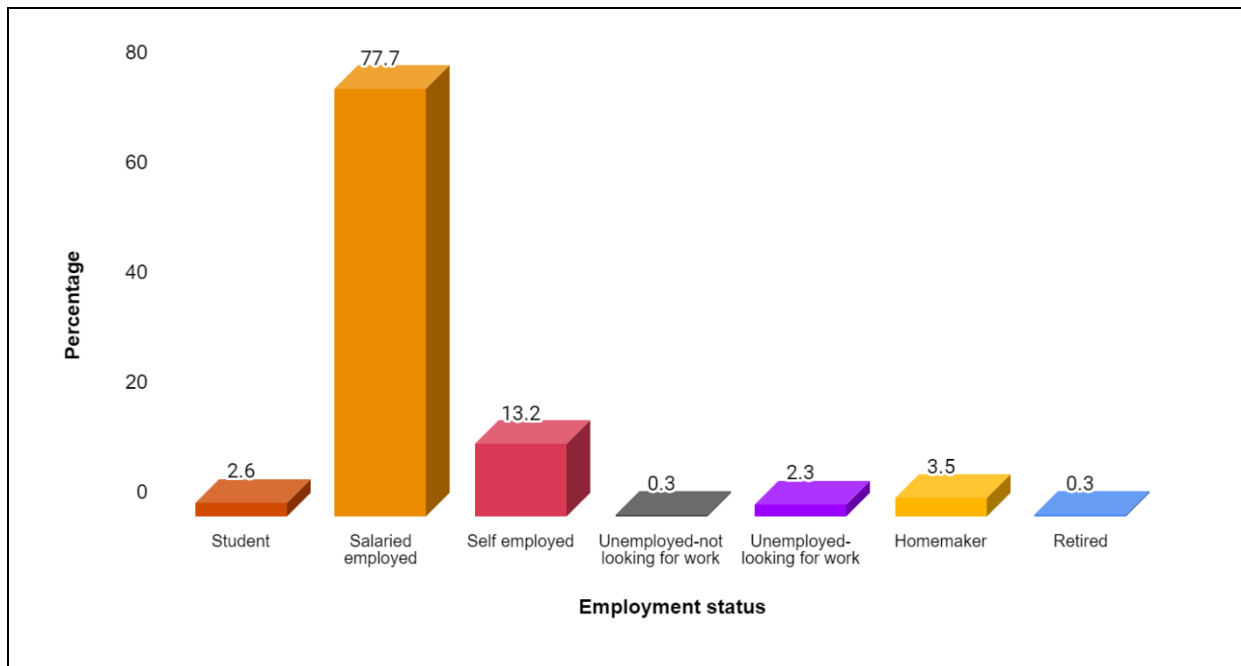
Figure 5. 5: Highest level of education



5.2.6 Employment status

Depicted in Figure 5.6 is the employment status composition of the sample. It shows that the majority of the participants were salaried employed individuals representing 77.7 percent of the insurance policyholders. This was followed by self-employed participants who made up 13.2 percent of the sample. The third group consisted of homemakers who represented 3.5 percent of the sample. Some participants were unemployed but looking for work which represented 2.3 percent of the insurance policyholders. The remaining were unemployed and not looking for work and retired individuals, both representing 0.3 percent of the sample.

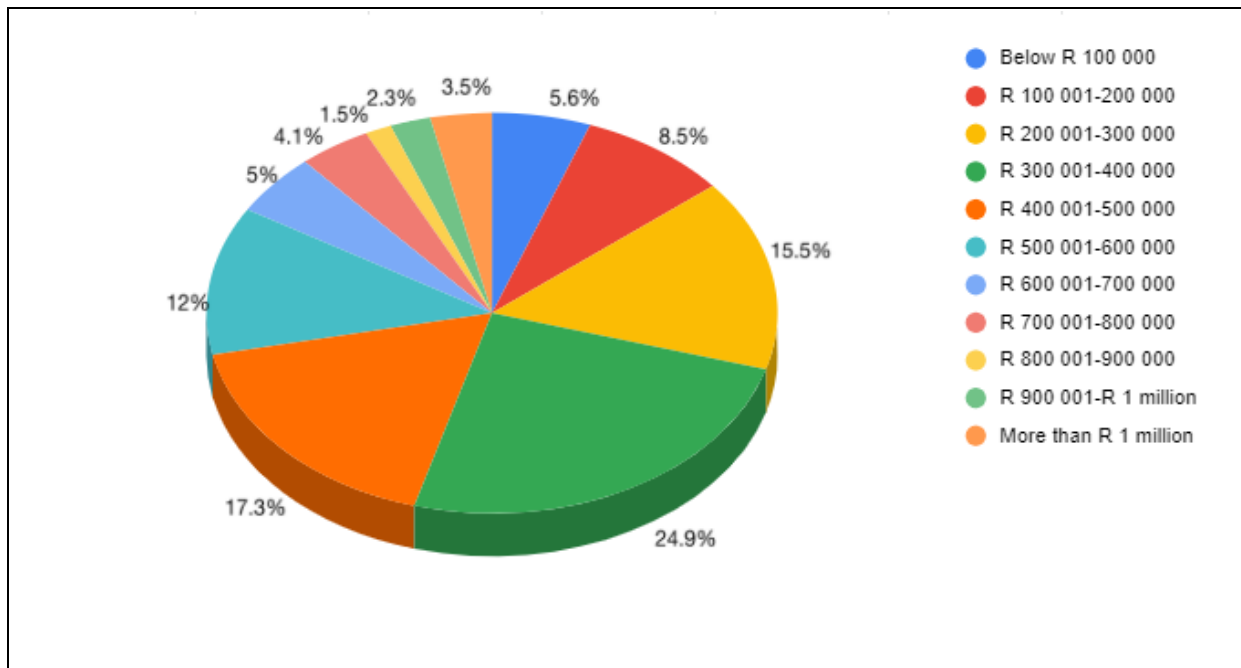
Figure 5. 6: Employment status



5.2.7 Annual income

The distributed questionnaire required the participants to disclose their annual income. The results show that 24.9 percent of the participants earn between R300 001 and R400 000. The second biggest group in the range between R 400 001 to R500 000 represent 17.3 percent of the participants. Approximately 15.5 percent of the participants earn between R 200 001 and R300 000 annually. This was followed by individuals who earned R 500 001 and R600 000, representing 12.0 percent of the sample. The fifth group consisted of individuals with an annual income between R 100 001 and R200 000 and represented 8.5 percent of the sample. Participants earning an annual income below R100 000 and from R 600 001 to R700 000 represented 5.6 and 5.0 percent of the sample respectively. Figure 5.6 shows that approximately 4.1 percent of the sample between R 700 001 and R800 000. Participants earned more than a million represented 3.5 percent of the sample in the study. The remaining two groups represented 2.3 and 1.5 percent and the participants had an annual income between R 900 001 and R 1 million and between R 800 001 and R900 000.

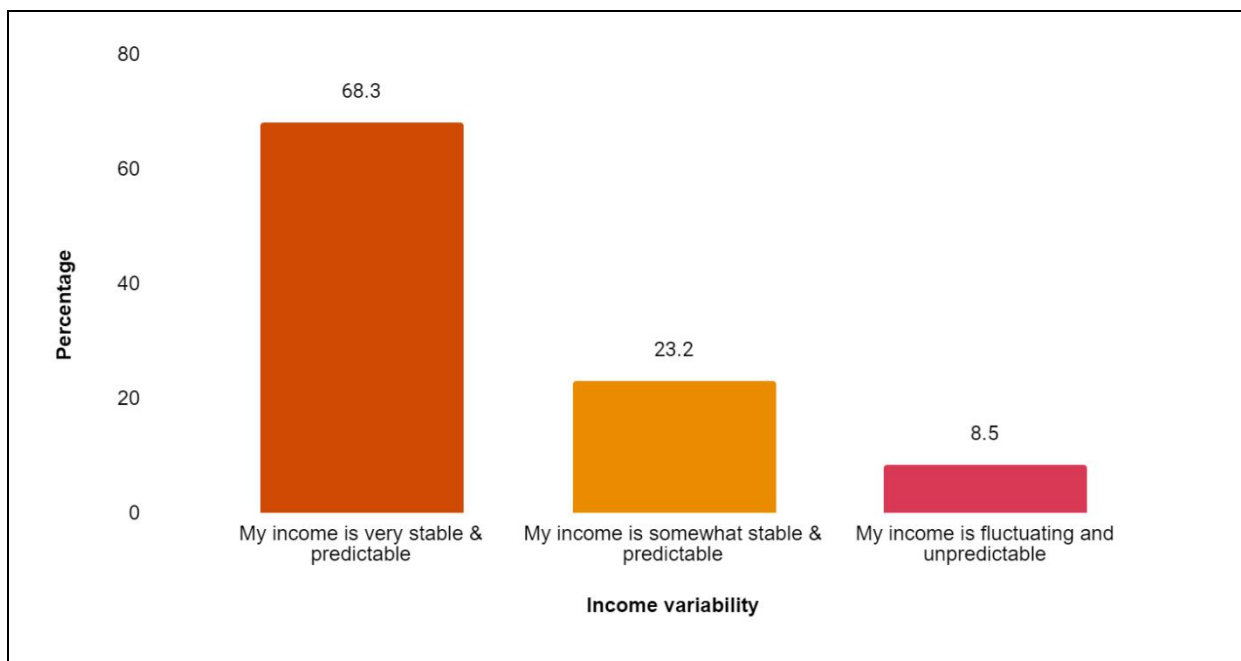
Figure 5. 7: Annual income



5.2.8 Income variability

Regarding income variability, Figure 5.8 shows that 68.9 percent of the participants had a very stable and predictable income, while 23.2 percent had a somewhat stable and predictable income. The smallest group of people represented 8.5 percent of the participants whose income was fluctuating and unpredictable.

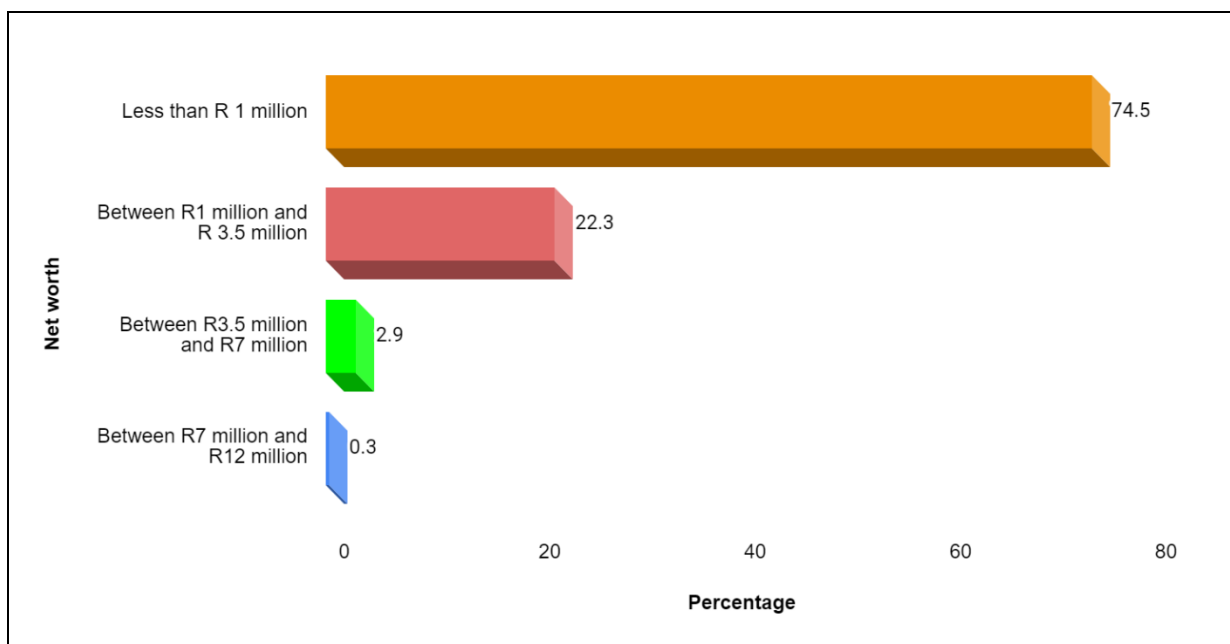
Figure 5. 8: Income variability



5.2.9 Net worth

The net worth of the participants represents the total wealth of the participants by taking into account the individuals' financial assets and liabilities. Figure 5.8 shows that most of the participants (74.5%) had a net worth of less than R1 million. Those with a net worth between R1 million and R 3.5 million accounted for 22.3 percent. This was followed by participants with a net worth between R3.5 million and R7 million, who accounted for 2.9 percent of the sample. The last smallest group was between R7 million and R12 million and represented 0.3 percent.

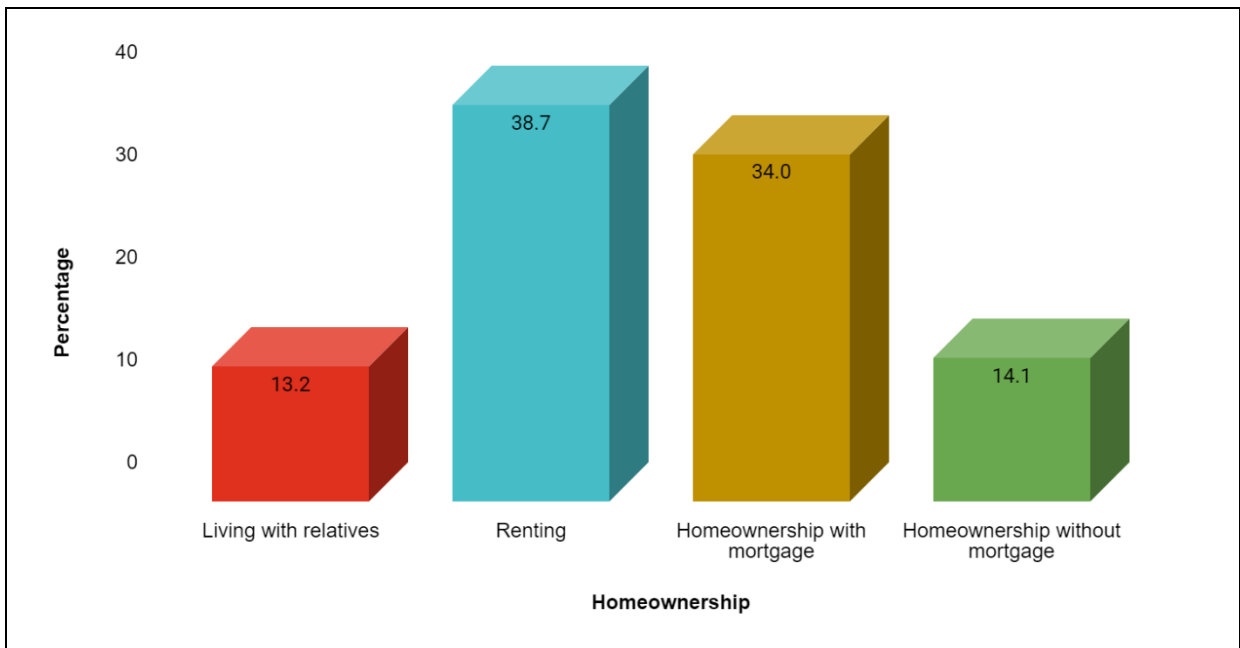
Figure 5. 9: Net worth



5.2.10 Homeownership

Figure 5.9 shows that 38.7 percent of the participants were renting while 34.0 percent had homeownership with a mortgage. The third group was participants with homeownership without a mortgage and accounted for 14.1 percent. The remaining group were participants living with relatives and represented 13.2 percent of the sample.

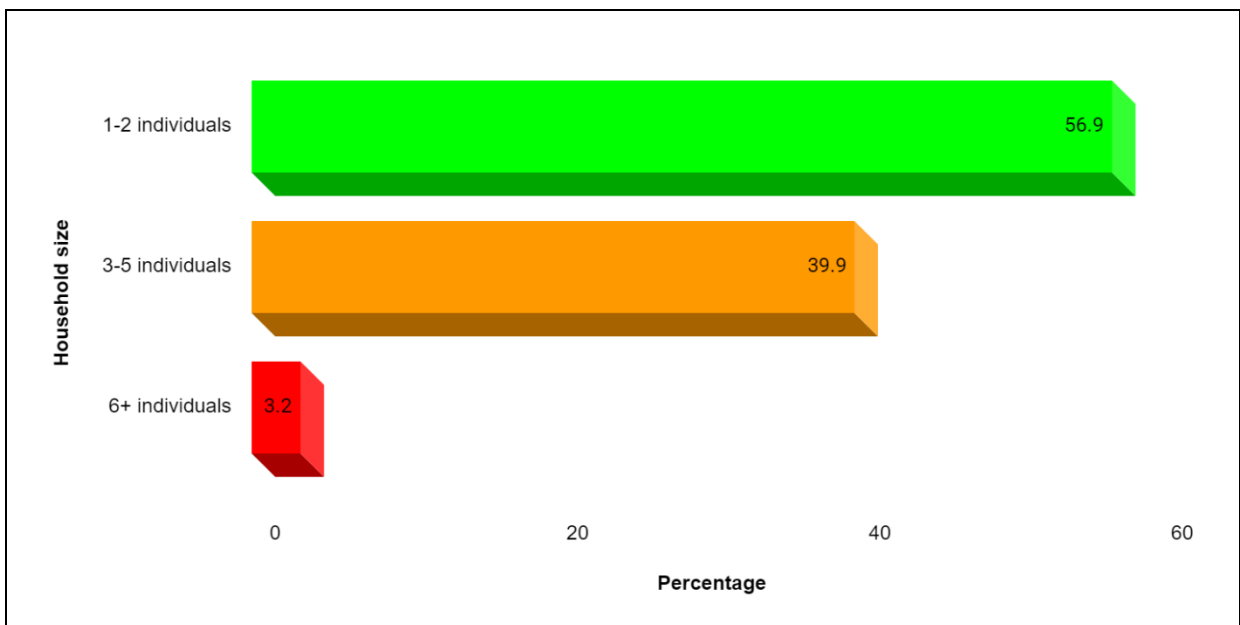
Figure 5. 10: Homeownership



5.2.11 Household size

Considering the household size, it was grouped into three categories. Almost 56.9 percent were in the one to two individuals category. The second group (39.9%) were individuals with a household size of three to five individuals. The smallest group (3.2%) were individuals with a household size of 6 or more individuals.

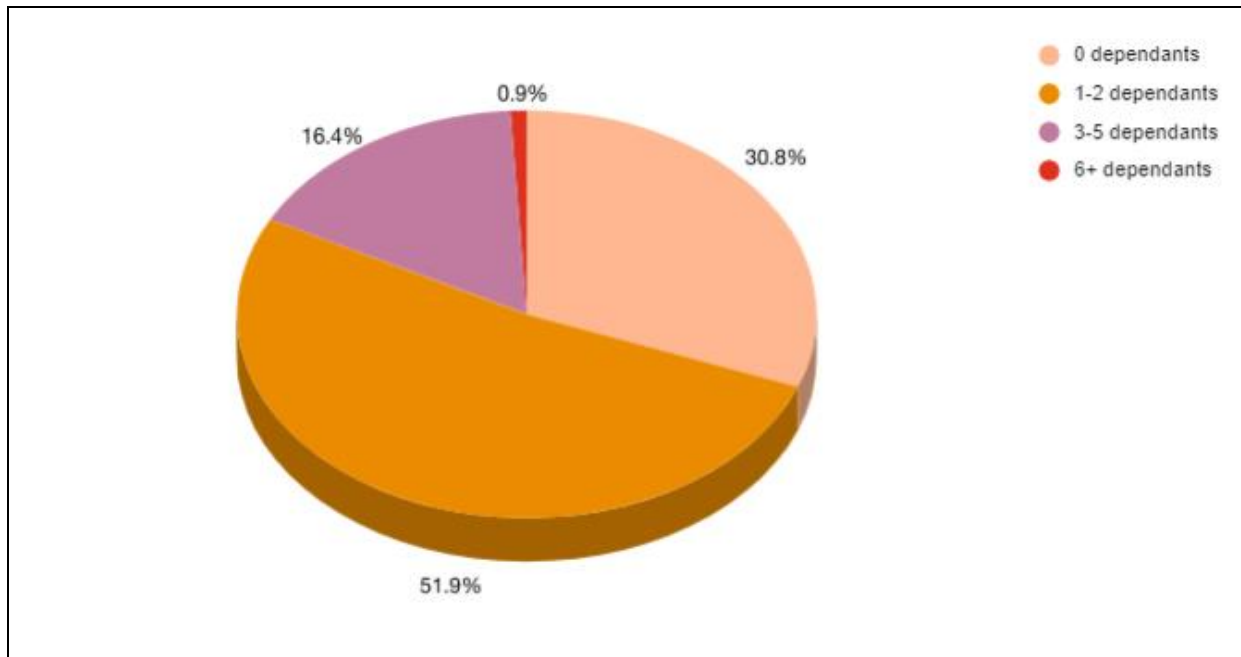
Figure 5. 11: Household size



5.2.12 Number of dependants

Figure 5.11 shows the number of dependants each of the participants had. The majority (51.9%) had one to two dependants, followed by participants with zero dependants representing 30.8 percent. Almost 16.4 percent of the participants had three to five dependants, while 0.9 percent had six or more dependants.

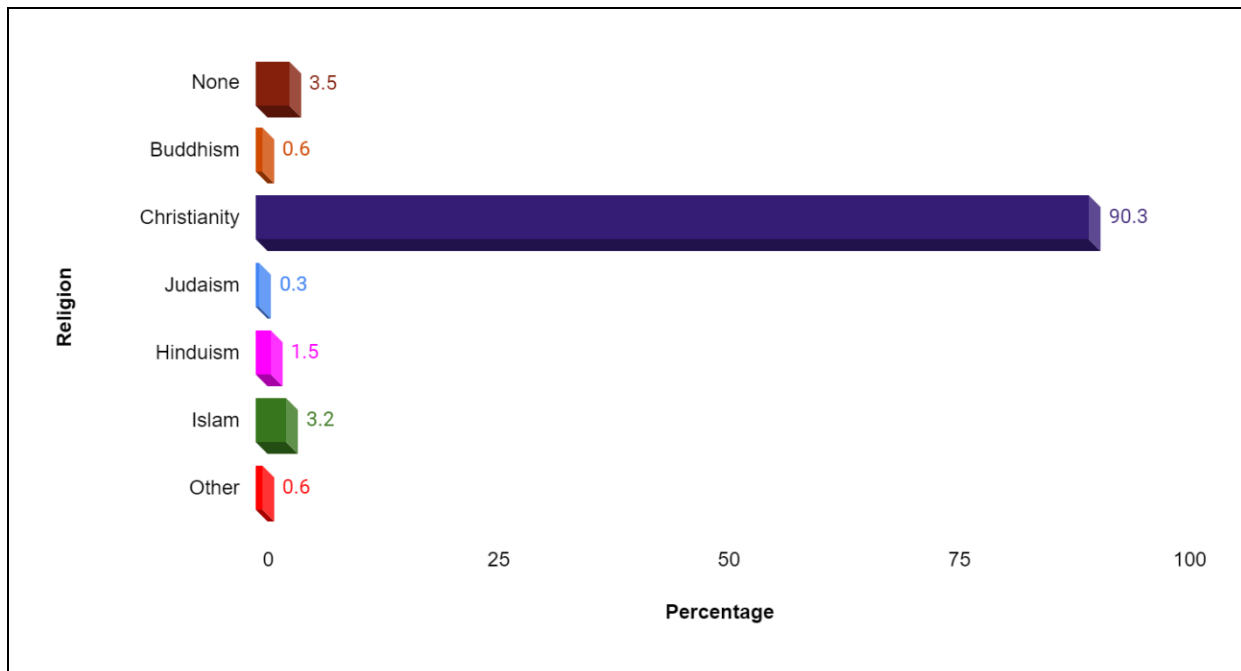
Figure 5. 12: Number of dependants



5.2.13 Religion

As indicated in Table 5.1 and Figure 5.12, the sample included 90.3 percent of Christian insurance policyholders and 3.5 with no religion. Approximately 3.2 percent were Islam and 1.5 percent were Hindu. The sample also recorded 0.6 Buddhists and those following other religions. Almost 0.3 percent were Jewish participants.

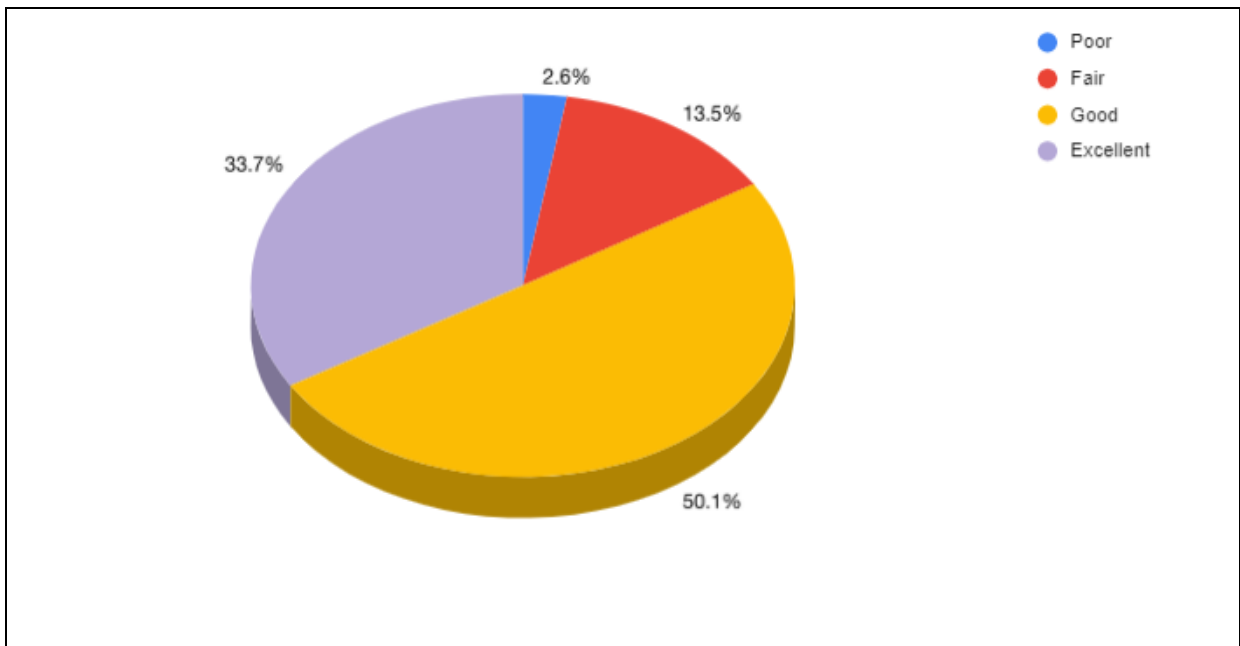
Figure 5. 13: Religion



5.2.14 Health status

Considering health status, Figure 5.13 shows that the majority of the participants (50.1%) have good health. The second group (33.7%) were participants with excellent health, while 13.5 percent were individuals with fair health. The smallest group (2.6%) represented individuals with poor health.

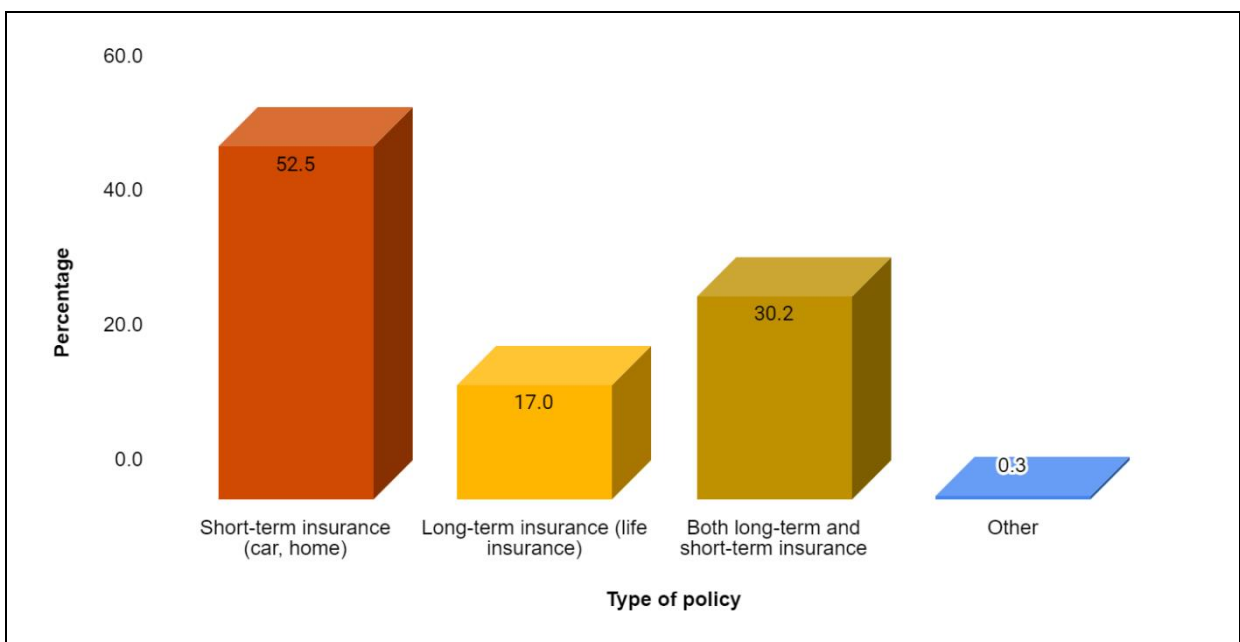
Figure 5. 14: Health status



5.2.15 Type of policy

As shown in figure 5.15, the type of policy was grouped into four categories. The largest group of participants (52.5%) were individuals with short-term insurance policies, followed by 30.2 percent who had both short-term and long-term insurance policies. Participants with long-term insurance represented 17.0 percent, while 0.3 percent had other types of insurance policies.

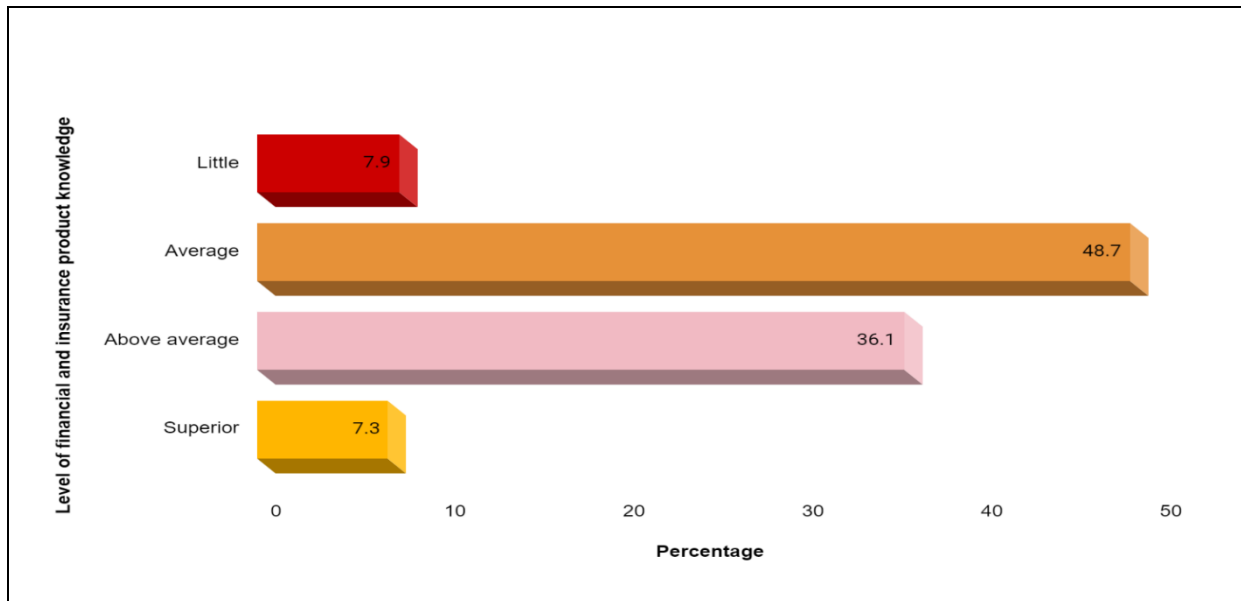
Figure 5. 15: Type of policy



5.2.16 Level of financial and insurance product knowledge

Figure 5.16 clearly shows that 48.7 percent of the participants had average financial and insurance product knowledge. Approximately 36.1 percent has above-average financial and insurance product knowledge. Participants with little and superior financial and insurance product knowledge represented 7.9 and 7.3 percent, respectively.

Figure 5. 16: Level of financial and insurance product knowledge



5.3 DESCRIPTIVE ANALYSIS

The following section discusses the descriptive statistics of the questionnaire by calculating the means, standard deviations and percentages to derive an overview of the data set. Table 5.2 below indicates the responses from Section B of the questionnaire where the participants answered questions relating to their financial well-being, which might influence their perceptions of risk. Table 5.2 indicates the frequencies and percentages acquired from Section B from 341 participants who formed part of the sample.

Table 5. 2: Descriptive analysis of B – Financial well-being

Financial well-being		Response	N	%
B1	Who is responsible for making financial decisions?	You on your own	215	63.0
		You with your partner	109	32.0
		Your partner	6	1.8
		Somebody else	11	3.2
B2	What do you feel is the level of your financial stress today?	Overwhelming stress	39	11.4
		High stress	100	29.3
		Low stress	170	49.9

		No stress at all	32	9.4
B3	How satisfied are you with your present financial situation? The more dissatisfied you are, the lower the number.	1	24	7.0
		2	105	30.8
		3	144	42.2
		4	68	19.9
B4	How do you feel about your current financial situation?	Overwhelming stress	29	8.5
		High stress	162	47.5
		Low stress	111	32.6
		No stress at all	39	11.4
B5	How often do you worry about being able to meet normal monthly living expenses?	Worry all the time	43	12.6
		Sometimes worry	120	35.2
		Rarely worry	132	38.7
		Never worry	46	13.5
B6	How confident are you that you could find the money to pay for a financial emergency that costs about R10 000?	Worry all the time	49	14.4
		Sometimes worry	99	29.0
		Rarely worry	98	28.7
		Never worry	95	27.9
B7	How often does this happen to you? You want to go out to eat, go to a movie or do something else and don't go because you can't afford to?	All the time	29	8.5
		Sometimes	130	38.1
		Rarely	133	39.0
		Never	49	14.4
B8	How frequently do you find yourself just getting by financially and living paycheck to paycheck?	All the time	59	17.3
		Sometimes	113	33.1
		Rarely	123	36.1
		Never	46	13.5
B9	How stressed do you feel about your personal finances in general?	Overwhelming stress	32	9.4
		High stress	99	29.0
		Low stress	174	51.0
		No stress at all	36	10.6

As observed in Table 5.2, about 63 percent of the participants indicated that they are responsible for their financial decisions, while 32 percent make financial decisions with their partner. Item B1 also shows that 3.2 percent rely on somebody else to make financial decisions on their behalf. Lastly, 1.8 percent indicated that their partners are responsible for making financial decisions for them.

Regarding how people feel about their level of financial stress when completing the questionnaire, 49.9 percent indicated that they had low stress. The second group of participants (29.3%) indicated high stress. Approximately 11.4 percent of the insurance policyholders felt overwhelming stress while the last group (9.4%) had no stress at all.

The participants were required to indicate how satisfied they were with their present financial situation. The one represented complete dissatisfaction, while 4 represented complete

satisfaction. The majority of the participants (42.2%) indicated the number three, suggesting that they were satisfied. This was followed by 30.8 percent who indicated they were dissatisfied. The last groups indicated that they were completely satisfied (19.9%) and completely dissatisfied (7.0%).

Section B also analysed how the participants felt about their current financial situation. The majority (38.7%) indicated high stress, followed by 32.6 percent who indicated low stress. Approximately 11.4 percent indicated that they had no stress, and the last group (8.5%) indicated overwhelming stress.

As shown in Table 5.2, item B5 aimed to obtain information about how often the participants worry about being able to meet normal monthly living expenses. The results show that the largest group (38.7%) indicated that they rarely worry. The second group (35.2%) indicated that they sometimes worry while 12.6 worry all the time. The last group (13.5%) indicated that they never worry about being able to meet normal monthly living expenses.

To analyse the participants' financial well-being, item B6 required them to disclose how confident they were that they could find the money to pay for a financial emergency that cost about R10 000. The results obtained showed very little variation, with 29 percent indicating that they sometimes worry and 28.7 percent indicating that they rarely worry. While 27.9 percent indicated they never worry, 14.4 indicated that they worry all the time.

Moreover, Section B of the questionnaire required the participants to state how they would find themselves unable to eat out or go to a movie. The majority of the participants (39%) indicated that they rarely find themselves in such a situation. This was followed by 38.1 percent who indicated that they sometimes worry. Table 5.2 shows that 14.4 percent never worry about going to eat out or watch a movie, while the last group (8.5%) indicated that they worry all the time.

The participants were also required to disclose how frequently they would find themselves getting by financially and living paycheck to paycheck. Table 5.2 shows that 36.1 percent indicated that they rarely find themselves in that situation, followed by 33.1 percent who indicated sometimes. Approximately 17.3 percent worry all the time and 13.5 percent never find themselves getting by financially and living paycheck to paycheck.

Lastly, Section B required the participants to indicate how stressed they felt about their finances. The results show that 51 percent indicated low stress while the second group (29%)

indicated high stress. Approximately 10.6 percent indicated they generally had no stress about their finances and 9.4 percent indicated overwhelming stress.

Section C of the questionnaire required the participants to indicate what drives their financial decisions. A six-point Likert scale was used for the participants to indicate the degree to which they agree or disagree with the statements for each of the nine behavioural finance biases. The options were as follows: strongly disagree (1), disagree (2), somewhat disagree (3), somewhat agree (4), agree (5) and strongly agree (6). Table 5.3 also indicates the means and standard deviations for each item provided.

Table 5. 3: Descriptive analysis of Section C – Behavioural finance biases

Behavioural bias	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
Representativeness	16	36	27	63	144	55	4.31	1.378
Overconfidence	8	24	25	78	127	79	4.55	1.251
Framing	8	28	32	88	113	72	4.43	1.278
Gambler's fallacy	12	30	45	69	114	71	4.34	1.364
Mental accounting	11	36	41	70	111	72	4.32	1.381
Loss aversion	13	39	34	59	118	78	4.36	1.427
Regret aversion	22	30	22	67	125	75	4.37	1.453
Availability bias	33	50	36	56	99	67	3.99	1.627
Self-control	10	25	27	69	107	103	4.60	1.341

As shown in Table 5.3 above, the majority of the responses were concentrated on the right side, meaning that the participants mostly agreed with the behavioural finance biases provided. All the behavioural biases obtained a mean score above four except for availability bias which obtained a mean score of 3.99. Table 5.3 indicated that the highest mean score was 4.60 for self-control. This result suggests that the participants exercise self-control to minimise losses when making financial decisions. The highest standard deviations were obtained from availability bias (1.63) and regret aversion (1.45). This suggests that the participants tend to make inaccurate financial decisions by relying on a piece of available information only. The remaining behavioural finance biases items obtained varying standard deviations (>1), indicating varying responses from the insurance policyholders regarding the items that drive their financial decisions.

In the questionnaire, Section D required the participants to indicate the degree to which they agree or disagree with the statements relating to risk perception using a six-point Likert scale. The aim was to find out which factors resonate with the insurance policyholders. Table 5.4 shows the descriptive analysis of Section D.

Table 5. 4: Descriptive analysis of Section D – Risk identification

Risk perception	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
A risk is an event that results in a pure financial loss	18	25	41	84	115	58	4.25	1.359
A risk is an event that can result in an emotional loss	7	18	33	94	138	51	4.44	1.143
Risk is the feeling of not knowing what is going to happen	5	17	21	85	139	74	4.64	1.126
I feel that my consciousness of risk has increased over the years	1	8	20	90	136	86	4.79	0.983
I feel more exposed to risk than ever before	3	12	28	63	156	79	4.74	1.067
I would rather forfeit a low premium for higher insurance coverage	6	26	31	67	140	71	4.53	1.233
I feel that I am surrounded by risk in everyday life	4	12	24	65	153	83	4.76	1.080
I would feel more exposed to risk by not having any type of insurance	3	17	24	58	138	101	4.80	1.141
I feel a sense of comfort and security knowing I have insurance	1	7	17	70	144	102	4.92	0.965
I feel uneasy by taking out low insurance cover	2	35	29	75	116	84	4.52	1.266

As shown in Table 5.4 above, most of the participants’ responses were recorded on the right side, which is more positive than the left side. This resulted in high means, which were all greater than four (> 4). The highest mean (4.92) was recorded for the second last item showing that the majority of the participants (92.66%) agree that they feel a sense of comfort and security knowing they have insurance. This was followed by the eighth item (4.80), which also suggested that the majority of the participants (87.09%) agree that they would feel more

exposed to risk by not having any type of insurance. The results show different standard deviations, which were all greater than one (>1) except for item four, with a standard deviation of 0.983. The highest standard deviation was recorded for the first item suggesting a variation in views of insurance policyholders regarding how they identify risk. The highest standard deviation (1.359) was obtained from the first item, suggesting variation in the responses. Approximately 75.37% of the participants identify risk as an event that results in a pure financial loss, while 24.63% hold an alternative view.

Section E of the questionnaire aimed to obtain information about the participants' risk perception using the DOSPERT scale. The descriptive analysis of Section E is indicated in Table 5.5 below.

Table 5. 5: Descriptive analysis of Section E – DOSPERT risk perception scale

Item	Item	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
Ethical	E1	69	64	93	75	30	10	2.89	1.351
	E2	66	74	74	73	41	13	2.96	1.426
	E3	143	72	42	36	33	15	2.38	1.550
Financial	E4	67	63	40	84	57	30	3.27	1.617
	E5	161	57	34	42	36	11	2.32	1.561
	E6	182	51	40	31	28	9	2.12	1.473
	E7	182	51	31	26	33	18	2.21	1.615
Health	E8	131	62	39	40	39	30	2.66	1.726
	E9	163	51	35	25	49	18	2.41	1.688
	E10	152	59	32	30	45	23	2.49	1.711
	E11	100	48	43	65	56	29	3.05	1.713
Social	E12	70	40	55	73	57	46	3.43	1.692
	E13	63	45	40	70	66	57	3.59	1.736
	E14	57	66	47	66	67	38	3.39	1.643
	E15	45	46	37	70	83	60	3.82	1.661
Recreational	E16	80	63	36	47	75	40	3.28	1.769
	E17	123	59	31	45	50	33	2.82	1.784
	E18	99	58	36	48	58	42	3.10	1.806
	E19	86	55	37	50	63	50	3.29	1.817

Table 5.5 shows the descriptive analysis of the DOSPERT scale. Items E1-E3 represents ethical risk. The majority of the participants' responses were concentrated on the left side, leading to lower means being recorded. The highest mean recorded at 2.96 for item E2 shows that most people disagree with the statement provided. This result also shows that 62.76 percent of the

insurance policyholders disagree that they are likely to download proprietary software from the internet, while 37.24 percent agree. Regarding standard deviation, item E3 shows the highest standard deviation (1.550) for ethical risk, suggesting a variation in the insurance policyholders' views regarding their likelihood of returning a wallet they found that contains R500. A mean score of 3.27 was recorded for E3, where only 24.63 percent agreed with the statement while 75.37 agreed.

Items E4 to E7 represent the financial factor of the DOSPERT scale. Similarly, the majority of the responses were concentrated on the left side, leading to lower means. The highest mean recorded (2.32) was recorded for item E5, where most participants (73.90%) disagreed with the statement while 26.10 percent agreed.

Health was inspected in items E8 to E11. The highest mean recorded was 3.05 for item E11, where approximately 56.01 percent of the policyholders disagreed about speaking their mind about an unpopular issue in a meeting at work. The standard deviations were all above one, with the highest being 1.726 from item E8. This suggests a variation in views of insurance policyholders regarding driving a car without a seatbelt, while 68.04 percent of the participants disagree, and 31.96 percent of the participants agree.

The DOSPERT scale also analysed the social factor. Items E12 to E15 all had means above 3.3. Item E12 had the highest mean for social (3.82), showing that the majority agreed to choose a career that they truly enjoy over a more prestigious one. On the other hand, item E13 recorded the highest standard deviation suggesting a variation in the views of the insurance policyholders regarding moving to a city far away from their extended family. Approximately 43.40 percent disagree with the statement, while 56.60 percent agree with the statement.

All means were greater than three regarding the recreational factor except for E17, with the lowest mean (2.82). The highest mean (3.29) and standard deviation (1.817) were recorded for item E19. This suggested that approximately 52.20 percent disagreed that they would bungee jump off a tall bridge, while 47.80 percent agreed that they would.

Moreover, Section E explored the insurance perception of the policyholders. Table 5.6 below presents the results obtained regarding the insurance policyholders' insurance risk perception.

Table 5. 6: Descriptive analysis of Section E – Insurance risk perception

Item	Very unlikely	More likely	Unlikely	Likely	More likely	Very likely	Mean	Standard deviation
I feel more at risk of losing my possessions now than I did 10 years ago	33	27	46	73	100	62	4.07	1.531
10 years ago, I felt safer without insuring my possessions	28	37	47	80	84	65	4.03	1.525
10 years ago, I paid a lower premium on my insurance due to lower risk	35	30	36	75	93	72	4.11	1.579

Table 5.6 shows that the responses were concentrated on the right side regarding insurance risk perception, leading to higher mean scores. All mean scores recorded were greater than four (>4). The highest mean (4.11) was recorded for the third item, showing that most of the participants (70.38%) agree that they paid a lower premium on their insurance than they did 10 years ago. This was followed by the first item (4.07), which also suggested that most participants (68.91%) agree that they feel more at risk of losing their possessions now than 10 years ago. The highest standard deviation was obtained from the third item suggesting that there was variation in the responses. Approximately 29.62% of the participants are unlikely to feel that 10 years ago, they paid a lower premium on insurance due to lower risk, while 70.38% hold an alternative view.

Section E of the questionnaire also aimed to obtain information about the participants' risk tolerance using the SCF scale. Table 5.7 below presents the results obtained regarding the insurance policyholders' risk tolerance.

Table 5. 7: Descriptive analysis of Section E – Risk tolerance scale

Risk tolerance	N	%
Take substantial financial risks, as I only have insurance on one of my assets	75	22.0
Take above average financial risk, as most of my assets are not covered	75	22.0
Take average financial risks as most of my assets are covered but not comprehensively	106	31.1
Not willing to take any financial risks, I have comprehensive insurance cover	85	24.9

As observed in Table 5.7, most insurance policyholders (31.1%) indicated that they are willing to take average financial risks as most of their assets are covered but not comprehensively. This was followed by 24.9 percent of insurance policyholders who indicated that they are not willing to take any financial risks because they have comprehensive insurance cover. Another group of insurance policyholders (22%) indicated that they are willing to take substantial financial risks, as they only have insurance on one of their assets. Similarly, 22 percent of insurance policyholders indicated that they are willing to take above average financial risk, as most of their assets are not covered.

Section F of the questionnaire aimed to obtain information about the likelihood of external circumstances to influence the insurance decisions of the participants. The descriptive analysis of political risk is indicated in Table 5.8 below.

Table 5. 8: Descriptive analysis of Section F – Political-legal

Political risk	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
Taking political circumstances into consideration when making insurance decisions.	22	21	56	100	98	44	4.06	1.340
Political negatively influencing confidence and causing people to insure more possessions the South African.	16	19	58	83	102	63	4.25	1.341
Political circumstances negatively influencing insurance performance.	14	19	44	88	88	88	4.41	1.360

As shown in Table 5.8, the majority of the responses were concentrated on the right side leading to high mean scores. All the responses in Section F of the questionnaire obtained high mean scores and were all greater than four (>4). The highest mean score (4.41) was obtained from the last item suggesting that 77.42 percent of insurance policyholders believe that political circumstances can negatively influence their insurance performance, while 22.58 percent disagree. All items recorded high standard deviations greater than one, suggesting significant agreement amongst policyholders regarding political risk. Once more, the highest mean score (1.360) was obtained from the last item. Section F also aimed to obtain information about the

policyholders' reactions to market fluctuations, volatility and international events, as indicated in Table 5.9 below.

Table 5.9: Descriptive analysis of Section F – Reactions to market fluctuations, volatility and international events

Item	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
I take market fluctuations and volatility into consideration when making investment decisions.	6	11	19	93	128	84	4.70	1.107
Periods of high fluctuations and volatility in the markets, make me take more calculated risks concerning my insurance policy.	7	18	35	106	119	56	4.41	1.159
I will remain with my initial long-term insurance policy, regardless of high market fluctuations and volatility.	11	16	38	92	100	84	4.48	1.280
Periods of high market fluctuations and volatility cause me to doubt my current insurance coverage.	9	30	57	70	97	78	4.32	1.364
During a global pandemic, I will take out insurance.	29	29	50	65	102	66	4.11	1.523
During a global pandemic, I will increase my insurance coverage.	28	24	57	67	92	73	4.14	1.517

As observed in Table 5.9, all the mean scores were greater than four leading to the concentration on the side of the positive continuum. The highest mean (4.70) was obtained from the first item suggesting that 89.44 percent of the participants agree that they take market fluctuations and volatility into consideration when making investment decisions. All the items achieved standard deviations higher than one, suggesting that the participants have similar views. The highest standard deviation (1.523) was obtained from the fifth item in Table 5.9, suggesting a variation in views regarding taking out insurance during a global pandemic, while 68.33 percent agree, 31.67 percent disagree.

Participants were also required to indicate the likelihood that crime news would/were to influence their insurance policy decisions. The descriptive analysis regarding crime is shown in Table 5.10 below.

Table 5. 10: Descriptive analysis of Section F – Crime

Item	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
I do keep myself informed regarding news about crimes that may affect my level of insurance coverage.	8	16	23	88	112	94	4.65	1.217
I do take news regarding local criminal events into consideration when making insurance decisions.	9	10	28	75	122	97	4.71	1.199
Negative crime statistics negatively influence my level of insurance coverage.	7	20	42	79	95	98	4.55	1.293
As a result of previous crimes in Gauteng, I take more calculated risks when making insurance decisions.	7	17	22	77	105	113	4.74	1.238

As observed in Table 5.10, the majority of the participants resonated with the positive continuum. All mean scores were greater than 4.5. Table 5.11 shows that the highest mean (4.74) was obtained from the last item suggesting that 86.51 percent of the policyholders take more calculated risks when making insurance decisions as a result of previous crimes in Gauteng. The highest standard deviation (1.293) was obtained from the third item in Table 5.10 showing some variation in the views regarding the influence of negative crime statistics on the policyholders’ insurance coverage. Approximately 79.77 percent agree while 20.23 disagree.

Lastly, the participants were required to indicate the likelihood that news about unemployment would influence their insurance policy decisions. The descriptive analysis regarding crime is shown in Table 5.11 below.

Table 5. 11: Descriptive analysis of Section F – Unemployment

Item	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Mean	Standard deviation
I do keep myself informed regarding news about unemployment that may affect my insurance policy coverage.	10	16	44	90	93	88	4.48	1.289
High unemployment levels influence my insurance decisions.	13	17	51	90	94	76	4.36	1.318
As a result of previous unemployment rates in Gauteng, I take more calculated risks when making insurance decisions.	13	17	40	92	87	92	4.46	1.336

As observed in Table 5.11, most of the responses lie on the right side. All mean scores were greater than 4.3. Table 5.11 shows that the highest mean (4.48) was obtained from the first item suggesting that 79.47 percent of the policyholders keep themselves informed regarding news about unemployment that may affect their insurance policy coverage. The highest standard deviation (1.336) was obtained from the last item in Table 5.11, showing some variation in the views regarding the influence of previous unemployment rates on the policyholders' insurance decisions. Approximately 79.47 percent agree, while 20.53 percent disagree.

5.4 EXPLORATORY FACTOR ANALYSIS (EFA)

According to Watkins (2018), Factor Analysis (FA) is a technique used to simplify complex data sets by identifying related factors. EFA is an analytics method used to reduce large amounts of data into fewer data sets (Watkins, 2018). This statistical method intends to simplify data by identifying constructs that can explain covariation between variables (DeCoster, 1998). EFA, therefore, achieves this through discovering common factors among the measured variables to strengthen the relationships among the observed variables (Ather & Balasundaram, 2009).

FA was performed on the following sections of the questionnaire:

- Section B: Financial well-being
- Section D: Risk identification
- Section E: Risk perception scale

- Section F: External / international events

5.4.1 Exploratory factor analysis of Section B – Financial well-being

Key statistical methods linked to factor analysis need to be performed before concluding on EFA. This was done through analysing the Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of sphericity. Malhotra (2008) determined that for appropriate factor analysis, the KMO indicator should be a high value (0.5 to 1). Malhotra *et al.* (2017:714) highlighted that KMO values between 0.5 and 1.0 are adequate for factor analysis while values below 0.5 are inadequate. As Kaiser (1974) proposed, a KMO value is mediocre if it ranges between 0.5 and 0.7, good if it ranges between 0.7 and 0.8, great between 0.8 and 0.9 and superb if it is between 0.9 and 1. Regarding the sample size, a good sample size should be at least 150 with a ratio of approximately five items per variable (Pallant, 2013:190). In this study, a sample size of 341 yielded a ratio of at least five items per variable.

For Section B (financial well-being), a KMO value of 0.932 was obtained, which is higher than 0.5 as previously proposed by (Kaiser, 1974). Along with high KMO values, Bartlett’s test of sphericity should be utilised to test the null hypothesis that the variables are not correlated through a comparison of the correlation matrix (IBM, 2020). This determines if the variables which can be grouped to form fewer factors show redundancy as individual variables. For Bartlett’s test of sphericity to be considered for factor analysis, it should be significant at $p < 0.05$ (Pallant, 2013). For Section B, the null hypothesis was significant ($p < 0.05$). Hence, the variables suggest adequacy for Section B factor analysis.

Table 5. 12: KMO and Bartlett’s test of sphericity for Section B

KMO and Bartlett’s test of sphericity		Section B: Financial well-being
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.932
Bartlett’s test of sphericity	Approx. chi-square	1880.430
	Degree of freedom (df)	28
	Significance (Sig)	0.000

As observed in Table 5.13, The KMO static was recorded at 0.932, indicating it was adequate for factor analysis as it was above the minimum requirement (0.5) (Kaiser, 1974). Bartlett’s

test of sphericity was significant at $p < 0.05$, which strongly signifies a non-random correlation matrix (IBM, 2020).

Table 5. 13: Section B (Financial well-being) – total variance

Items	Item loadings	Eigenvalue	% of variance	Cumulative %	Cronbach's alpha
B2	0.809	5.385	67.318	67.318	0.930
B3	0.817				
B4	0.810				
B5	0.834				
B6	0.805				
B7	0.818				
B8	0.795				

Table 5.13 above shows that a single factor containing eight items (financial well-being) was obtained, which explained 67.318 percent of the total variance with an eigenvalue of 5.385. In order to deem Section B reliable, Cronbach's alpha should be greater than 0.8 (Statistics solutions, 2021). As observed in Table 5.13, a high Cronbach's alpha (0.930) was obtained. It was, therefore, concluded that the financial well-being construct in Section B of the questionnaire passed the reliability test for measuring the perception of insurance policyholders and thus financial well-being.

5.4.2 Exploratory factor analysis of Section D – Risk Identification

EFA was also utilised in Section D of the questionnaire, which is intended to measure how insurance policyholders identify risk. Table 5.14 shows that KMO and Bartlett's test of sphericity generated appropriate results for factor analysis in Section D of the questionnaire. The KMO index obtained a value of 0.864, which is greater than 0.5, therefore, adequate for EFA (Malhotra *et al.*, 2017). Bartlett's test of sphericity was statistically significant at $p < 0.05$, suggesting that the variables in Section D of the questionnaire are suitable for factor analysis.

Table 5. 14: KMO and Bartlett's test of sphericity for Section D

KMO and Bartlett's test of sphericity		Section D: Risk identification
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.864
Bartlett's test of sphericity	Approx. chi-square	1319.241
	Degree of freedom (df)	45
	Significance (Sig)	0.000

Table 5.15 presents the pattern matrix for Section D: Financial well-being. It was concluded that Section D contained two factors with a minimum of five items per factor. Pallant (2020) recommended that all items should have an item loading of 0.3 or greater to be deemed appropriate for the criteria. In order to determine the reliability of Section D of the questionnaire, the Cronbach alpha was computed. Both factors met the recommended score (> 0.7). Factor two obtained the highest Chronbach alpha (0.879), while factor one obtained a Chronbach alpha of 0.833, which was also satisfactory.

Table 5. 15: Pattern matrix of Section D (Risk identification)

Items	Factors	
	1	2
D8	0.833	
D9	0.814	
D10	0.777	
D7	0.728	
D6	0.508	
D1		0.879
D2		0.847
D3		0.679
D4		0.522
D5		0.463
Eigenvalue	4.561	1.307
% of Variance	45.607	13.066
Cumulative %	45.607	58.673

5.4.2.1 Naming and interpretation of dimensions in Section D: Risk identification

As shown in Table 5.15, two factors that explained 58.673 percent of the variance were extracted. The factors considered had eigenvalues greater than 1.0 and were deemed appropriate for factor analysis (Mooi *et al.*, 2018). Thus, the two factors were considered adequate to report on policyholders' risk perception and explain how the policyholders identified risk.

Factor one, labelled as *risk identification*, consisted of five variables that explained 45.607 percent of the variance with an eigenvalue of 4.561. The variables loaded in this factor relate to how the insurance policyholders identify and assume risk and their consciousness of risk.

Factor two, labelled as *insurance risk identification*, consisted of five variables that explained 13.066 percent of the variance with an eigenvalue of 1.307. Two variables loaded in this factor

relate to how the policyholders feel towards risk, while three variables relate to how the policyholders feel about risks that are insurance specific.

5.4.2.2 Internal reliability of Section D – Risk identification

In order to determine the reliability of Section D of the questionnaire, Cronbach’s alpha values were computed for the two factors, namely, risk perception and insurance perception. The Cronbach’s alpha and correlation coefficient between the two factors is demonstrated in Table 5.16.

Table 5. 16: Reliability of scale for Section D – Risk identification

Section D: Risk identification	Number of items	Cronbach’s alpha
Factor 1: Risk identification	5	0.805
Factor 2: Insurance risk identification	5	0.819

As observed in Table 5.16, factor one and factor two achieved satisfactory Chronbach alpha values greater than 0.6. This indicates that the factors passed the reliability test (Malhotra et al., 2017:360). Factor one, risk identification, has a Cronbach alpha value of 0.805, denoting very good reliability. Similarly, factor two, insurance risk perception, obtained a Cronbach alpha value of 0.819, suggesting very good reliability. It can therefore be concluded that Section D of the questionnaire consists of satisfactory internal consistency reliability.

5.4.3 Exploratory factor analysis of Section E – Risk Perception Scale

EFA was utilised in Section E of the questionnaire to assess the risk-taking that is likely to influence the risk perception of the insurance policyholders. This section followed the DOSPERT scale, which measures in five domains, namely, ethical, financial, health, social and recreational (Blais, 2006). The EFA and internal reliability conducted on all five domains are discussed in the following subsections.

5.4.3.1 Risk perception scale: Ethical

Section E of the questionnaire assessed how likely the policyholders are to make ethical decisions. As indicated in Table 5.17, the KMO and Bartlette’s test of sphericity for ethical risk consisted of three items (E1, E2 and E3). The KMO and Bartlett’s test of sphericity further show sufficient results for factor analysis of the ethical construct in Section E of the questionnaire. The KMO index obtained a value of 0.692, which is in the mediocre range. Therefore, the ethical risk factor can be regarded as mediocre sampling adequacy because it is greater than the minimum value of 0.5 (Kaiser, 1974). Bartlett’s test of sphericity was also

significant at $p < 0.05$, indicating that the variables are related and suitable for factor analysis of Section E (Ethical) of the questionnaire.

Table 5. 17: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Ethical

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Ethical
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.692
Bartlett’s test of sphericity	Approx. chi-square	300.983
	Degree of freedom (df)	3
	Significance (Sig)	0.000

As indicated in Table 5.18, the ethical factor of the DOSPERT scale was obtained from three items which explained 70.108 percent of the total variance with an eigenvalue of 2.103. The ethical factor was deemed reliable because it obtained a desired Cronbach’s alpha of 0.786, suggesting good reliability for measuring the perception of insurance policyholders. It was, therefore, concluded that the ethical construct in Section E of the questionnaire passed the reliability test for measuring the perception of insurance policyholders.

Table 5. 18: Section E (Ethical) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E1	2.103	70.108	70.108	0.786
E2				
E3				

5.4.3.2 Risk perception scale: Financial

As illustrated in Table 5.19, three items (E4, E5, E6 and E7) made up the financial risk factor of the DOSPERT scale as presented by the KMO and Bartlette’s test of sphericity below. The KMO and Bartlette’s test of sphericity further show sufficient results for factor analysis of the financial construct in Section E of the questionnaire. The KMO index obtained a good value of 0.782, which exceeds the minimum value of 0.5. Therefore, the ethical factor can be regarded as good sampling adequacy (Kaiser, 1974). Bartlett’s test of sphericity was also significant at $p < 0.05$. This signified that the variables are related and appropriate for factor analysis of Section E (Financial) of the questionnaire.

Table 5. 19: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Financial

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Financial
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.782
Bartlett’s test of sphericity	Approx. chi-square	798.793
	Degree of freedom (df)	6
	Significance (Sig)	0.000

As observed in Table 5.20 below, the financial factor consisted of four items as desired. The items obtained an eigenvalue of 2.760. The financial factor also accounted for 69.010 percent of the total variance. The Cronbach’s alpha obtained was 0.786, which can be regarded as good reliability as it exceeded the minimum required o 0.5 (Bonett, 2014). Therefore, it can be concluded that the financial factor in Section E of the questionnaire is reliable.

Table 5. 20: Section E (Financial) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E4	2.760	69.010	69.010	0.786
E5				
E6				
E7				

5.4.3.3 Risk perception scale: Health

The DOSPERT scale also looked at the health factor and assessed how likely the policyholders were to make certain health decisions. Concerning Table 5.21, the KMO and Bartlett’s test of sphericity produced adequate results for factor analysis relating to the health factor in Section E of the questionnaire. The KMO index achieved a satisfactory value of 0.799, exceeding the minimum required value of 0.5 (Malhotra *et al.*, 2017:712). Bartlett’s test of sphericity achieved a p-value of 0.000, which was statistically significant at $p < 0.05$. Conclusively, this suggests that the variables are adequate for factor analysis.

Table 5. 21: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Health

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Health
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.799
Bartlett’s test of sphericity	Approx. chi-square	932.418
	Degree of freedom (df)	6
	Significance (Sig)	0.000

In order to determine the reliability of the financial factor, Cronbach’s alpha was computed as indicated in Table 5.23. It obtained a desirable value of 0.903, which exhibited very good reliability as it was above the minimum required of 0.6 (Pallant, 2020:201).). It is noticeable in Table 5.22 that the health factor achieved an eigenvalue of 3.104 and explained 77.606 percent of the total variance. Given the results below, the health factor is, therefore, deemed appropriate and reliable.

Table 5. 22: Section E (Health) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E8	3.104	77.606	77.606	0.903
E9				
E10				
E11				

5.4.3.4 Risk perception scale: Social

Section E also assessed the social factor of the DOSPERT scale to assess how policyholders were likely to engage in certain social events. KMO and Bartlett’s test of sphericity for the social factor achieved satisfactory results. As indicated in Table 5.23 below, the KMO index obtained a value of 0.845, suggesting very good adequacy for factor analysis as it exceeded the minimum required value (0.5) (Malhotra *et al.*, 2017:712). The null hypothesis was also significant at $p < 0.05$, suggesting that the social factor was adequate for factor analysis.

Table 5. 23: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Social

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Social
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.845
Bartlett’s test of sphericity	Approx. chi-square	858.680
	Degree of freedom (df)	6
	Significance (Sig)	0.000

As observed in Table 5.24 below, the social factor comprised four items, accounting for 77.316 percent of the total variance and an eigenvalue of 3.093. The Cronbach’s alpha was computed and obtained a value of 0.902, which indicated very good reliability (Pallant, 2020). As a result, the social actor in Section E of the questionnaire consists of internal consistency reliability and is therefore considered reliable.

Table 5. 24: Section E (Social) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E12	3.093	77.316	77.316	0.902
E13				
E14				
E15				

5.4.3.5 Risk perception scale: Recreational

The last factor of the DOSPERT scale was recreational, which aimed to assess policyholders’ likelihood of taking part in several recreational events. The results are presented in Table 5.25, showing the KMO and Bartlett’s test of sphericity of the recreational factor. The KMO index obtained a value of 0.805, signifying very good adequacy as recommended by Kaiser (1974), which is higher than the minimum value of 0.5. Bartlett’s test of sphericity also achieved satisfactory results as it obtained a null hypothesis of $p < 0.05$, which is statistically significant. This suggests that the variable correlate with itself but not with other variables. Ultimately this proves that the variables are related to the data in the DOSPERT scale of factor analysis.

Table 5. 25: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Recreational

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Recreational
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.805
Bartlett’s test of sphericity	Approx. chi-square	958.271
	Degree of freedom (df)	6
	Significance (Sig)	0.000

Regarding the reliability of the recreational factor, desired results were obtained as all four items explained 78.696 of the total variance in policyholder perception, as presented in Table 5.26. Similarly, a very high Cronbach’s alpha (0.910) was obtained, making this factor a reliable scale for measuring the insurance policyholders’ risk perceptions due to risky recreational events. Therefore, it can be concluded that the recreational factor of Section E consists of satisfactory internal consistency reliability and is, therefore, reliable.

Table 5. 26: Section E (Recreational) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E16	3.148	78.695	78.696	0.910
E17				
E18				
E19				

5.4.3.5 Risk perception scale: Insurance risk perception

While measuring the risk perception scale in Section E of the questionnaire, it also assessed policyholders’ present perception of risk compared to 10 years ago, referred to as insurance risk perception. The KMO and Bartlett’s test of sphericity were computed and produced satisfactory results. Table 5.27 shows that the KMO index obtained a value of 0.741, signifying good sampling adequacy as it was greater than the minimum required value of 0.5 (Samuels, 2017:2). Bartlett’s test of sphericity was also significant at $p < 0.05$. Hence, the variables are related and appropriate for factor analysis.

Table 5. 27: KMO and Bartlett’s test of sphericity for Section E – Risk Perception Scale: Insurance risk perception

KMO and Bartlett’s test of sphericity		Section E – Risk Perception Scale: Insurance risk perception
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.741
Bartlett’s test of sphericity	Approx. chi-square	531.303
	Degree of freedom (df)	3
	Significance (Sig)	0.000

In order to test the reliability of the historical factor, Cronbach’s alpha was computed as presented in Table 5.28. Desired results were obtained as a very high Cronbach’s alpha value of 0.878 was achieved. This made the historical factor a reliable scale for measuring the insurance policyholders’ risk perceptions due to how they felt about risk 10 years ago. The three items also explained 80.339 percent of the total variance in policyholder perception. Hence, it can be concluded that the historical factor of Section E consists of satisfactory internal consistency reliability and is, therefore, reliable.

Table 5. 28: Section E (Insurance risk perception) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
E20	2.410	80.339	80.339	0.878
E21				
E22				

Hence, based on the results in Table 5.28, it can be concluded that Section E's insurance risk perception factor consists of satisfactory internal consistency reliability and is, therefore, reliable.

5.4.3.6 Correlation matrix of risk perception scale (DOSPERT)

A correlation analysis was conducted to determine the inter-factor relationship. This correlation analysis assumed a two-tailed significance level ($p < 0.1$). Ultimately, the purpose of the analysis is to determine if the variables can lead to sampling error. Hence, the greater the correlation coefficients of the variables, the greater the sampling error (Ferreira, 2018:152). In

order to perform this test, the Pearson correlation was utilised with the guidelines listed below Cohen (1988:81) and Pallant (2020:140).

- $r = 0.10 - 0.29 =$ Small effect
- $r = 0.30 - 0.49 =$ Medium effect
- $r = 0.50 - 1.00 =$ Strong effect

Table 5. 29: Inter-factor correlation - DOSPERT

Factors	Ethical	Financial	Health	Social	Recreational
Ethical	1.000				
Financial	0.644**	1.000			
Health	0.519**	0.713**	1.000		
Social	0.359**	0.551**	0.631**	1.000	
Recreational	0.436**	0.569**	0.637**	0.604**	1.000

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

According to Blalock (1963), multicollinearity is present if the correlation coefficients of the independent variables exceed 0.9. It is evident in Table 5.29 that each variable perfectly correlates with itself. When observing the correlation between all the variables, the results indicated a positive linear association. The correlations between all factors ranged from medium effect to strong effect. Notably, none of the variables attained correlation coefficients greater than 0.9. Conclusively, the risk of multicollinearity is absent (Malhotra *et al.*, 2012:322).

5.4.4 Exploratory factor analysis of Section F – The external environment

Section F of the questionnaire assessed the risks events relating to the external environments that are likely to influence the perceptions of insurance policyholders. Section F of the questionnaire comprises four sections linked to external environment influences, namely political-legal, reaction to market fluctuations, volatility and international events, crime and unemployment. The EFA conducted on all four sections is discussed in the subsequent sections.

5.4.4.1 Section F: Political-legal

Concerning political-legal in Section F of the questionnaire, the KMO and Bartlett’s test of sphericity was computed for factor analysis as indicated in Table 5.30. The KMO index obtained a value of 0.715, indicating good sampling adequacy for factor analysis because it was greater than the minimum required value of 0.5 (Samuels, 2017:2). Likewise, Bartlett’s

test of sphericity attained satisfactory results with $p=0.000$, which was statistically significant at $p<0.05$. It can, therefore, be concluded that the variables in political-legal are suitable for factor analysis.

Table 5. 30: KMO and Bartlett’s test of sphericity for Section F – Political-legal

KMO and Bartlett’s test of sphericity		Section F – Political-legal
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.715
Bartlett’s test of sphericity	Approx. chi-square	512.901
	Degree of freedom (df)	3
	Significance (Sig)	0.000

As shown in Table 5.31, the political-legal construct comprised three items. The political-legal factor explained 79.040 percent of the total variance and attained an eigenvalue of 2.371. The Cronbach alpha from political-legal achieved desired results with a value of 0.867, signifying the internal consistency reliability of the construct (Churchill, 1979).

Table 5. 31: Section F (political-legal) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
F1	2.371	79.040	79.040	0.867
F2				
F3				

5.4.4.2 Section F: Market fluctuations, volatility and international events

Regarding market fluctuations, volatility and international events in Section F of the questionnaire, the KMO and Bartlett’s test of sphericity was computed and generated satisfactory results. As shown in Table 5.32, the KMO index generated great sampling adequacy with a value of 0.812, which is satisfactory as it is greater than the minimum required value of 0.5. Bartlett’s test of sphericity was significant at $p<0.05$, signifying that the market fluctuations, volatility and international events construct is appropriate for factor analysis.

Table 5. 32: KMO and Bartlett’s test of sphericity for Section F – Market fluctuations, volatility and international events

KMO and Bartlett’s test of sphericity		Section F – Market fluctuations, volatility and international events
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.812
Bartlett’s test of sphericity	Approx. chi-square	873.649
	Degree of freedom (df)	15
	Significance (Sig)	0.000

As indicated in Table 5.33, desired results were obtained as all the variables in market fluctuations, volatility and international events in Section F explained 57.406 percent of the total variance with an eigenvalue of 3.444. A very good Cronbach’s alpha value of 0.851 was attained from all the items in the market fluctuations, volatility and international events, signifying very good reliability. In conclusion, the market fluctuations, volatility and international events construct suitable internal consistency reliability; hence it is deemed reliable.

Table 5. 33: Section F (Market fluctuations, volatility and international events) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
F4	3.444	57.406	57.406	0.851
F5				
F6				
F7				
F8				
F9				

5.4.4.3 Section F: Crime

Concerning crime, the KMO and Bartlett’s test of sphericity produced satisfactory results. The KMO index produced a value of 0.804, which is above the minimum required of 0.5 for factor analysis. Moreover, for factor analysis to be appropriate, Bartlett’s test of sphericity should be statistically significant ($p < 0.05$) to ensure the variables are strongly related (Kaiser, 1974). As indicated in Table 5.34, Bartlett’s test of sphericity was statistically significant. Consequently, it can be concluded that the crime construct is suitable for factor analysis.

Table 5. 34: KMO and Bartlett’s test of sphericity for Section F – Crime

KMO and Bartlett’s test of sphericity		Section F – Crime
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.804
Bartlett’s test of sphericity	Approx. chi-square	931.537
	Degree of freedom (df)	6
	4Significance (Sig)	0.000

As indicated in Table 5.35, desired results were achieved as the crime construct explained 77.898 percent of the total variance with an eigenvalue of 3.116. The Cronbach’s alpha achieved a satisfactory value of 0.905, indicating very good reliability. Therefore, it can be concluded that the variables are appropriate and reliable.

Table 5. 35: Section F (Crime) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach’s alpha
F10	3.116	77.898	77.898	0.905
F11				
F12				
F13				

5.4.4.4 Section F: Unemployment

As observed in Table 5.36, the KMO and Bartlett’s test of sphericity was computed for the unemployment construct. The KMO index attained a value of 0.740, which is satisfactory for factor analysis since it exceeds the minimum required value of 0.5 (Samuels, 2017). Bartlett’s test of sphericity also attained desired results as it is statistically significant at $p < 0.05$. Consequently, the unemployment construct in Section F of the questionnaire is deemed appropriate for factor analysis.

Table 5. 36: KMO and Bartlett’s test of sphericity for Section F – Unemployment

KMO and Bartlett’s test of sphericity		Section F – Unemployment
Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.740
Bartlett’s test of sphericity	Approx. chi-square	689.932
	Degree of freedom (df)	3
	Significance (Sig)	0.000

Regarding the unemployment construct in Section F of the questionnaire desired results were obtained as the construct explained 84.287 percent of the total variance with an eigenvalue of 2.529.

Table 5. 37: Section F (Unemployment) – total variance

Items	Eigenvalue	% of variance	Cumulative %	Cronbach's alpha
F14	2.529	84.287	84.287	0.907
F15				
F16				

Table 5.37 shows that Cronbach's alpha achieved a value of 0.907, which signifies very good internal consistency reliability regarding the unemployment construct. Thus, the unemployment construct in Section F of the questionnaire has very good reliability.

5.5 HYPOTHESIS TESTING

In order to test the empirical objectives of the study, the null hypothesis and alternative hypothesis were formulated as stated below:

H₀₁: There is no significant relationship between demographics and insurance policyholder risk identification and risk perception.

H_{a1}: There is a significant relationship between demographics and insurance policyholder risk identification and risk perception.

H₀₂: There is no significant relationship between risk tolerance and insurance policyholder risk perception.

H_{a2}: There is a significant relationship between risk tolerance and insurance policyholder risk perception.

H₀₃: There is no significant relationship between endogenous factors and insurance policyholder risk perception.

H_{a3}: There is a significant relationship between endogenous factors and insurance policyholder risk perception.

H₀₄: There is no significant relationship between exogenous factors and insurance policyholder risk perception.

H_{a4}: There is a significant relationship between exogenous factors and insurance policyholder risk perception.

5.6 INFLUENCE OF DEMOGRAPHICAL FACTORS ON THE RISK IDENTIFICATION AND RISK PERCEPTION OF INSURANCE POLICYHOLDERS

This section aims to determine how demographical factors influence the risk identification and risk perception of insurance policyholders. The following demographics were selected for this section and included in the sample:

- Age
- Gender
- Ethnicity
- Marital status
- Level of education
- Employment status
- Annual income
- Income variability
- Net worth
- Homeownership
- Household size
- Number of dependents
- Religion
- Health status
- Type of policy
- Financial knowledge

5.6.1 Demographics with risk identification and risk perception non-parametric correlation

In this section, Spearman's correlation was used to test the relationship between the demographic information of the policyholders and their risk identification and risk perception. The results of the non-parametric test are shown in Table 5.38. The results assume a two-tailed level of significance at 1 percent ($p < 0.01$) significance level.

Table 5. 38: Demographical factors and risk identification and risk perception

Determinant factor	Spearman correlation	Age	Level of education	Annual income	Income variability	Net worth	Household size	Dependents	Health status	Financial knowledge
Risk Identification										
Risk identification	Correlation coefficient	0.04	0.06	.149**	-0.099	0.045	-0.044	0.008	-.125*	.151**
	Sig. (2-tailed)	0.44	0.28	0.006	0.067	0.408	0.422	0.886	0.021	0.005
	N	341	341	341	341	341	341	341	341	341
Insurance risk identification	Correlation coefficient	.143**	0.05	.168**	-0.018	.111*	-0.009	-0.002	-0.100	.190**
	Sig. (2-tailed)	0.01	0.40	0.002	0.738	0.040	0.874	0.975	0.064	0.000
	N	341.00	341	341	341	341	341	341	341	341
Risk Perception										
Ethical	Correlation coefficient	-.249**	0.05	-.128*	0.059	-.147**	-0.017	-0.087	0.037	0.050
	Sig. (2-tailed)	0.00	0.31	0.018	0.280	0.007	0.756	0.108	0.491	0.354
	N	341.00	341.00	341	341	341	341	341	341	341
Financial	Correlation coefficient	-.346**	.154**	-0.001	-0.093	-0.102	-.143**	-.172**	.116*	-0.081
	Sig. (2-tailed)	0.00	0.00	0.984	0.087	0.061	0.008	0.001	0.032	0.135
	N	341.00	341.00	341	341	341	341	341	341	341
Health	Correlation coefficient	-.341**	.127*	0.056	-0.102	-0.097	-.136*	-.219**	.234**	0.092
	Sig. (2-tailed)	0.00	0.02	0.302	0.061	0.073	0.012	0.000	0.000	0.089
	N	341.00	341.00	341	341	341	341	341	341	341
Social	Correlation coefficient	-.371**	.214**	.126*	-.117*	-0.028	-0.085	-.191**	.269**	0.099
	Sig. (2-tailed)	0.00	0.00	0.020	0.031	0.602	0.116	0.000	0.000	0.068
	N	341.00	341.00	341	341	341	341	341	341	341
Recreational	Correlation coefficient	-.333**	.193**	0.048	-0.043	-0.080	-.125*	-.171**	.333**	.199**
	Sig. (2-tailed)	0.00	0.00	0.375	0.428	0.139	0.021	0.002	0.000	0.000
	N	341.00	341.00	341	341	341	341	341	341	341
Insurance risk perception										
Insurance risk perception	Correlation coefficient	-.113*	-0.01	0.004	-0.052	-.146**	0.019	-0.074	.287**	.238**
	Sig. (2-tailed)	0.04	0.81	0.938	0.337	0.007	0.722	0.171	0.000	0.000
	N	341.00	341.00	341	341	341	341	341	341	341
**Correlation significant at the 0.01 level (2-tailed)										
* Correlation significant at the 0.05 level (2-tailed)										

5.6.1.1 Age groups

As shown in Table 5.38, all risk identification determinants had a positive association with age. The results in Table 5.38 show that one determinant, insurance risk identification, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between age and the consciousness of insurance risk of the insurance policyholders. Thus, older insurance policyholders are more conscious of an insurance risk than younger policyholders and hence are likely to feel more secure about having an insurance cover.

Table 5.38 also shows that all the determinants risk perception determinants had a negative association with age. The results in Table 5.38 show that five determinants, ethical risk, financial risk, health risk, social risk and recreational risk, were statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a negative correlation likelihood of engaging in a risky activity of the insurance policyholders.

However, one determinant, insurance risk perception, was statistically significant at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance level. This signifies a negative correlation between age and the perception of insurance risk of the insurance policyholders over the last 10 years. Thus, younger insurance policyholders are less likely to feel that their risk has increased over the last 10 years.

It can be concluded that there is a relationship between age and the likelihood of engaging in a risky activity of insurance policyholders. This agrees with the study conducted by Ferreira & Dickason-Koekemoer (2019:15), who discovered that younger individuals have a higher likelihood of engaging in risky events.

5.6.1.2 Level of education

As observed in Table 5.38, all risk identification determinants had a positive association with the level of education. The results show that both determinants, risk identification and insurance risk identification, were not statistically significant at both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and

5 percent significance levels. This signifies that the level of education does not influence the consciousness of risk and insurance risk.

Table 5.38 also shows that all the determinants had a positive relationship with the level of education. Three determinants, financial, social and recreational, were all statistically significant at a 1 percent level. Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. Conversely, health was statistically significant at the 0.05 level; hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at a 5 percent significance level. This signifies a positive correlation likelihood of engaging in a risky activity of the insurance policyholders. Thus the higher the education level, the more likely the individuals are to engage in higher risks.

However, one determinant, insurance risk perception, was not statistically both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at the 1 and 5 percent significance levels. This signifies that the level of education does not influence the perception of insurance risk of the insurance policyholders over the last 10 years.

It can be concluded that there is a relationship between the level of education and the likelihood of engaging in a risky activity of insurance policyholders. This agrees with a study by Grable (1997:15), who discovered that individuals with higher education levels are more likely to engage in higher risks.

5.6.1.3 Annual income

As observed in Table 5.38, all risk identification determinants had a positive association with annual income. The results show that both determinants, risk identification and insurance risk identification, were statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between annual income and the consciousness of risk and insurance risk of the insurance policyholders. Thus, the higher the insurance policyholder's annual income is, the more conscious of insurance risk they are compared to those with lower annual incomes.

As shown in Table 5.38, two risk perception determinants had a negative association with income, while three had a positive association. Ethical and social risk factors are significant at the 0.05 significance level, meaning the null hypothesis (H_{01}) can be rejected and the alternative

hypothesis (H_{a1}) can be concluded at the 5 percent significance level. Given the positive relationship between social risk and income levels, there is a positive correlation with the likelihood of engaging in a risky social event. This signifies a positive correlation likelihood of engaging in a risky social activity of the insurance policyholders. Thus, the higher the annual income, the more likely individuals will engage in higher social risks. However, there is a negative relationship between ethical risk and income levels. It can be concluded that there is a negative correlation with the likelihood of engaging in a risky ethical event. This signifies a negative correlation likelihood of engaging in a risky ethical activity of the insurance policyholders. Thus, the lower the annual income, the more likely individuals will engage in higher ethical risks.

One determinant, insurance risk perception, was not statistically both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected and the alternative hypothesis (H_{a1}) can be concluded at both the 1 and 5 percent significance levels. This signifies that the level of income does not influence the perception of insurance risk of the insurance policyholders over the last ten years.

Conclusively, there is a relationship between annual income and the likelihood of engaging in a risky activity of insurance policyholders. These results agree with a study by Van den Bergh (2018:177), who found that individuals with a higher income tend to take higher risks.

5.6.1.4 Income variability

Regarding income variability, Table 5.38 shows that all risk identification determinants are negatively associated with income variability. The results show that both determinants, risk identification and insurance risk identification, were not statistically significant at both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at the 1 and 5 percent significance levels. This signifies that the income variability does not influence the consciousness of risk and insurance risk.

As observed in Table 5.38, four of the determinants had a negative association with the income variability, while one had a positive association. One determinant, social, was statistically significant at a 5 percent level. Therefore, the null hypothesis (H_{01}) can be rejected and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance level. This signifies a negative correlation likelihood of engaging in a risky activity of the insurance policyholders.

Thus, the more stable and predictable income is, the more likely individuals will engage in higher risks.

On the other hand, one determinant, insurance risk perception, was not statistically both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) cannot be concluded at both the 1 and 5 percent significance levels. This signifies that the income variability does not influence the perception of insurance risk of the insurance policyholders over the last 10 years.

It can be concluded that there is a relationship between income variability and the likelihood of engaging in a risky activity of insurance policyholders. This agrees with a study by Grable (1997:15), who discovered that individuals with stable incomes are more likely to engage in higher risks. The results, therefore, suggest that income variability impacts the risk perception of policyholders. These results agree with a study by Irwin (1993), who discovered that individuals with stable incomes tend to engage in risky events.

5.6.1.5 Net worth

As shown in Table 5.38, all risk identification determinants had a positive association with net worth. The results in Table 5.38 show that one determinant, insurance risk identification, was statistically significant at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between net worth and the consciousness of insurance risk of the insurance policyholders. Thus, the higher the insurance policyholders' net worth, the more conscious they are of an insurance risk than lower net worth policyholders. Hence, policyholders with a higher net worth are likely to feel more secure about having insurance cover.

Furthermore, Table 5.38 shows that all the determinants risk perception determinants are negatively associated with net worth. The results in Table 5.38 show that one determinant, ethical risk, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a negative correlation likelihood of engaging in a risky ethical activity of the insurance policyholders.

Similarly, one determinant, insurance risk perception, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This also signifies a negative correlation between net worth and the perception of insurance risk of the insurance policyholders over the last 10 years. Thus, insurance policyholders with higher net worth are less likely to currently feel that their risk has increased over the last 10 years.

It can be concluded that there is a relationship between net worth and the likelihood of engaging in a risky activity of insurance policyholders. The results are contrary to a study done by Mabalane (2015:107), who found that high-income earners are likely to engage in risky events.

5.6.1.6 Household size

As shown in Table 5.38, all risk identification determinants had a negative association with household size. The results show that both determinants, risk identification and insurance risk identification, were not statistically significant at both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that the household size does not influence the consciousness of risk and insurance risk.

Table 5.38 also shows that all the determinants had a negative association with household size. One determinant, financial risk, was statistically significant at a 1 percent level, while two determinants, health risk and recreational risk, were statistically significant at a 5 percent level. Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance level. This signifies a negative correlation likelihood of engaging in a risky activity of the insurance policyholders. Thus, the bigger the household size, the less likely individuals will engage in higher risks.

However, one determinant, insurance risk perception, was not statistically both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that the household size does not influence the perception of insurance risk of the insurance policyholders over the last 10 years.

It can be concluded that there is a relationship between household size and the likelihood of engaging in a risky activity of insurance policyholders. The results are similar to a study by

Van Schalkwyk (2012), who found an inverse relationship between household size and likelihood to engage in risky events.

5.6.1.7 Dependents

Concerning the number of financial dependents in Table 5.38, one risk identification determinant was negatively associated with the number of financial dependents, while one had a positive association. The results show that both determinants, risk identification and insurance risk identification, were not statistically significant at both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that the number of financial dependents does not influence the consciousness of risk and insurance risk.

As shown in Table 5.38, all the risk perception determinants had a negative association with the number of financial dependents. Four risk perception determinants, financial, health, social, and recreational risk, were statistically significant at a 1 percent level. Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a negative correlation likelihood of engaging in a risky activity of the insurance policyholders. Thus, the higher the number of financial dependents, the less likely individuals will engage in higher risks.

However, one determinant, insurance risk perception, was not statistically both a 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that the number of financial dependents does not influence the perception of insurance risk of the insurance policyholders over the last 10 years.

It can be concluded that there is a relationship between the number of financial dependents and the likelihood of engaging in a risky activity of insurance policyholders. The results are similar to a study by Van Schalkwyk (2012), who found an inverse relationship between household size and likelihood to engage in risky events. The results agree with a study by Van Schalkwyk (2012), who found a negative relationship between the number of dependants and the likelihood to engage in risky events.

5.6.1.8 Health status

As shown in Table 5.38, all risk identification determinants had a negative association with health status. The results in Table 5.38 show that one determinant, risk identification, was statistically significant at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance level. This signifies a negative correlation between health status and the consciousness of insurance risk of the insurance policyholders. Thus, insurance policyholders with poor health are more conscious of an insurance risk than policyholders with good health.

Table 5.38 further shows that all the determinants risk perception determinants had a positive association with health status. The results in Table 5.38 show that three determinants, health risk, social risk and recreational risk, were statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation likelihood of engaging in a risky activity of the insurance policyholders. Only one determinant, financial risk, was statistically significant at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance level. This signifies a positive correlation likelihood of engaging in a risky activity of the insurance policyholders. Thus, healthier individuals are more likely to engage in risky activities.

Similarly, one determinant, insurance risk perception, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between health status and the perception of insurance risk of the insurance policyholders over the last 10 years. Thus, insurance policyholders with good health are more likely to currently feel that their risk has increased over the last 10 years.

It can be concluded that there is a relationship between health status and the likelihood of engaging in a risky activity of insurance policyholders. The results follow a study by Schurer (2015:492), who found that the healthier the individuals, the more likely they were to engage in risky activities.

5.6.1.9 Level of financial knowledge

Regarding the level of financial knowledge, Table 5.38 shows that all risk identification determinants had a positive association with health status. The results also show that risk

identification determinants, risk identification and insurance risk identification were statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between the level of financial knowledge and the consciousness of risk and insurance risk of the insurance policyholders. Thus, insurance policyholders with superior financial knowledge are more conscious of an insurance risk than policyholders with poor financial knowledge.

Moreover, Table 5.38 shows that all the determinants risk perception determinants had a positive association with the level of financial knowledge. The results in Table 5.38 show that only one determinant, recreational risk, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation likelihood of engaging in a risky activity of the insurance policyholders. This signifies a positive correlation likelihood of engaging in a risky activity of the insurance policyholders. Thus, individuals with superior financial knowledge are more likely to engage in risky activities.

Similarly, one determinant, insurance risk perception, was statistically significant at a 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies a positive correlation between the level of financial knowledge and the perception of insurance risk of the insurance policyholders over the last 10 years. Thus, insurance policyholders with superior financial knowledge are more likely to currently feel that their risk has increased over the last 10 years.

It can be concluded that there is a relationship between level financial knowledge and the likelihood of engaging in a risky activity of insurance policyholders. The results agree with a study by Grable and Joo (1999), who found that the greater the financial knowledge, the greater the likelihood of individuals to engage in risky events.

5.6.1.10 Gender

As observed in Table 5.39, the mean values of the perception of risk by insurance policyholders regarding gender were computed. Levene's test was utilised to determine risk identification and risk perception by gender.

Table 5. 39: Independent t-test of gender

Risk perception	Gender	N	Mean	SD	t	Df	Sig.	Mean difference
Risk Identification								
Risk identification	Male	154	4.58	0.82	0.07	339	0.946	0.00634
	Female	187	4.57	0.88				
Insurance risk identification	Male	154	4.71	0.83	0.03	339	0.973	0.00321
	Female	187	4.71	0.89				
Risk Perception								
Ethical	Male	154	3.08	1.29	4.76	339	0.000	0.60555
	Female	187	2.47	1.06				
Financial	Male	154	2.87	1.34	5.33	339	0.000	0.71075
	Female	187	2.16	1.12				
Health	Male	154	3.24	1.59	6.93	339	0.000	1.06293
	Female	187	2.17	1.24				
Social	Male	154	4.06	1.40	5.97	339	0.000	0.91568
	Female	187	3.14	1.42				
Recreational	Male	154	3.57	1.60	4.86	339	0.000	0.81417
	Female	187	2.75	1.49				
Insurance risk perception								
Insurance risk perception	Male	154	4.14	1.32	0.90	339	0.369	0.13573
	Female	187	4.01	1.43				

**Significant at 0.01 level

Table 5.39 above shows that five statistical differences were found between the gender of the insurance policyholder and the likelihood to engage in a risky event ($p < 0.01$). The higher mean value ($M = 4.06$, $SD = 1.40$) for males suggests that males are more likely to engage in risky social events than females ($M = 3.14$). The responses for males show higher means in all factors, ethical risk, financial risk, health risk, social risk and recreational risk than females, and this suggests that males generally have a higher likelihood of engaging in risky events than females. These findings agree with a study conducted by Morrongiello and Rennie (1998), who found that males have a higher likelihood of engaging in risks events than females.

However, no statistical differences were found between the gender of the insurance policyholder and risk identification, insurance risk identification, and insurance risk perception.

5.6.1.11 Marital status

Table 5.40 shows the mean values of the perception of risk by insurance policyholders based on their marital status. The ANOVA was utilised to determine the perception of risk by marital status.

Table 5. 40: ANOVA for marital status with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	6.261	4.00	1.57	2.179	0.071
	Within Groups	241.389	336.00	0.72		
	Total	247.650	340.00			
Insurance risk identification	Between Groups	8.009	4.00	2.00	2.728	0.029*
	Within Groups	246.583	336.00	0.73		
	Total	254.592	340.00			
Risk perception						
Ethical	Between Groups	24.221	4.00	6.06	4.325	0.002**
	Within Groups	470.419	336.00	1.40		
	Total	494.640	340.00			
Financial	Between Groups	33.566	4.00	8.39	5.433	0.000**
	Within Groups	518.967	336.00	1.54		
	Total	552.533	340.00			
Health	Between Groups	43.212	4.00	10.80	5.000	0.001**
	Within Groups	725.984	336.00	2.16		
	Total	769.195	340.00			
Social	Between Groups	63.026	4.00	15.76	7.775	0.000**
	Within Groups	680.892	336.00	2.03		
	Total	743.919	340.00			
Recreational	Between Groups	73.499	4.00	18.37	7.843	0.000**
	Within Groups	787.201	336.00	2.34		
	Total	860.699	340.00			
Insurance risk perception						
Insurance risk perception	Between Groups	19.093	4.00	4.77	2.533	0.040*
	Within Groups	633.088	336.00	1.88		
	Total	652.181	340.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

As observed from Table 5.40, risk identification is not significant at both the 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that marital status does not influence the consciousness of risk of the insurance policyholders. All DOSPERT factors relating to risk perception, ethical, financial, health, social, and recreational risks are statistically significant at a 1 percent significance level. Furthermore, insurance risk perception is significant at the 5 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance levels. This signifies that marital status influences the

consciousness of risk of the insurance policyholders. It can, therefore, be concluded that there are statistical differences between marital status and risk perception.

Table 5. 41: Significant differences between marital status with risk identification and risk perception

Risk perception	Mean				
	Single	Common-law spouse	Married	Divorced	Widowed
Risk identification					
Insurance risk identification	4.57	4.56	4.63	4.85	4.96
Risk perception					
Ethical	2.97	2.59	2.65	1.84	2.14
Financial	2.76	1.83	2.36	1.60	1.93
Health	2.92	2.04	2.60	1.50	1.64
Social	3.90	3.23	3.43	2.18	2.25
Recreational	3.50	2.06	3.00	1.93	1.75
Insurance risk perception					
Insurance risk perception	4.27	4.05	3.90	4.18	2.95

As shown in Table 5.41 above, widowed people had the highest mean values insurance risk identification compared to other marital groups. This indicates that widowed people are more conscious of insurance risk and feel more at risk by not having insurance cover.

Furthermore, in Table 5.41 above, single people had the highest mean values for ethical risk, financial risk, health risk, social risk, recreational risk and insurance risk perception compared to other marital groups. This indicates that single people have a higher likelihood to engage in the aforementioned risky events. Married people had the second highest means for all risks except insurance risk perception, suggesting a higher likelihood of engaging in risky events. This is contrary to a study by Grable (1997:82), who found that married individuals are likely to take more risky activities than non-married individuals.

5.6.1.12 Religion

As observed in Table 5.42, the ANOVA was utilised to determine the perception of risk by religion. The test of significance was utilised to determine if the factors of risk identification and risk perception were statistically significant at a 1 percent significance level ($p < 0.01$).

Table 5. 42: ANOVA for religion with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	1.997	3.00	0.67	0.913	0.435
	Within Groups	245.653	337.00	0.73		
	Total	247.650	340.00			
Insurance risk identification	Between Groups	8.113	3.00	2.70	3.698	0.012*
	Within Groups	246.479	337.00	0.73		
	Total	254.592	340.00			
Risk perception						
Ethical	Between Groups	2.947	3.00	0.98	0.673	0.569
	Within Groups	491.693	337.00	1.46		
	Total	494.640	340.00			
Financial	Between Groups	0.175	3.00	0.06	0.036	0.991
	Within Groups	552.359	337.00	1.64		
	Total	552.533	340.00			
Health	Between Groups	2.021	3.00	0.67	0.296	0.828
	Within Groups	767.174	337.00	2.28		
	Total	769.195	340.00			
Social	Between Groups	5.797	3.00	1.93	0.882	0.450
	Within Groups	738.121	337.00	2.19		
	Total	743.919	340.00			
Recreational	Between Groups	5.043	3.00	1.68	0.662	0.576
	Within Groups	855.656	337.00	2.54		
	Total	860.699	340.00			
Insurance risk perception						
Insurance risk perception	Between Groups	6.252	3.00	2.08	1.087	0.355
	Within Groups	645.929	337.00	1.92		
	Total	652.181	340.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

As observed in Table 4.42, risk identification is not significant at both the 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that religion does not influence the consciousness of risk of the insurance policyholders. On the other hand, insurance risk identification is significant at the 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at a 5 percent significance level ($p < 0.05$). This signifies that religion influences the consciousness of insurance risk of the insurance policyholders

All DOSPERT factors relating to risk perception, ethical, financial, health, social, and recreational risks are not statistically significant at a 1 percent significance level. Furthermore, insurance risk perception is not significant at both the 5 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at both significance levels. This signifies that religion does not influence the perception of insurance risk of the insurance policyholders. It can, therefore, be concluded that there are statistical differences between religion and insurance risk identification.

Table 5. 43: Significant differences between religion and insurance risk identification

Risk perception	Mean			
	None	Christianity	Islam	Other
Risk identification				
Insurance risk identification	4.27	4.69	5.31	5.12

As shown in Table 5.43 above, Islamic people ($M = 5.31$) had the highest mean values for insurance risk identification compared to other religious groups. However, the results cannot be concluded due to the lowest number of participants emanating from Islam and other religious groups. It can be concluded that Christians ($M = 4.69$) are more conscious of insurance risk and feel more at risk by not having an insurance cover.

5.6.1.13 Homeownership

Table 5.44 presents the results of the one-way ANOVA conducted to identify and analyse the effect of homeownership on insurance policyholder risk perception.

Table 5. 44: ANOVA for homeownership with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	2.287	3.00	0.76	1.047	0.372
	Within Groups	245.362	337.00	0.73		
	Total	247.650	340.00			
Insurance risk identification	Between Groups	7.479	3.00	2.49	3.400	0.018*
	Within Groups	247.113	337.00	0.73		
	Total	254.592	340.00			
Risk perception						
Ethical	Between Groups	42.044	3.00	14.01	10.435	0.000**
	Within Groups	452.596	337.00	1.34		
	Total	494.640	340.00			
Financial	Between Groups	32.696	3.00	10.90	7.065	0.000**
	Within Groups	519.837	337.00	1.54		

	Total	552.533	340.00			
Health	Between Groups	39.451	3.00	13.15	6.073	0.000**
	Within Groups	729.745	337.00	2.17		
	Total	769.195	340.00			
Social	Between Groups	92.667	3.00	30.89	15.984	0.000**
	Within Groups	651.252	337.00	1.93		
	Total	743.919	340.00			
Recreational	Between Groups	45.145	3.00	15.05	6.218	0.000**
	Within Groups	815.555	337.00	2.42		
	Total	860.699	340.00			
Insurance risk perception						
Insurance risk perception	Between Groups	92.667	3.00	30.89	15.984	0.000**
	Within Groups	651.252	337.00	1.93		
	Total	743.919	340.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

As shown in Table 5.44, risk identification is not significant at both the 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that homeownership does not influence the consciousness of risk of the insurance policyholders. However, insurance risk identification is significant at the 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at a 5 percent significance level ($p < 0.05$). This signifies that homeownership influences the consciousness of insurance risk of the insurance policyholders.

All DOSPERT factors relating to risk perception, ethical, financial, health, social, and recreational risks are statistically significant at a 1 percent significance level. Hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies that homeownership influences the risk perception of the insurance policyholders.

Furthermore, insurance risk perception is significant at the 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This shows that homeownership influences the perception of insurance risk of the insurance policyholders. It can, therefore, be concluded that there are statistical differences between homeownership and insurance risk identification, risk perception, and insurance risk perception.

Table 5. 45: Significant differences between homeownership with risk identification and risk perception

Risk perception	Mean			
	Living with relatives	Renting	Homeownership with mortgage	Homeownership without mortgage
Risk identification				
Insurance risk identification	4.52	4.65	4.71	5.04
Risk perception				
Ethical	2.81	3.08	2.65	2.01
Financial	2.54	2.69	2.53	1.73
Health	2.66	2.86	2.76	1.83
Social	3.73	3.77	3.79	2.27
Recreational	2.97	3.48	3.09	2.36
Insurance risk perception				
Insurance risk perception	3.95	4.29	4.17	3.34

As illustrated in Table 5.45, people who were renting had the highest mean values for ethical risk (M=3.08), financial risk (M=2.69), health risk (M=2.86) and recreational risk (M=3.48) compared to other groups. This indicates that people who are renting have a higher likelihood to engage in the aforementioned risky events. Individuals who are homeowners without a mortgage had the highest mean for insurance risk identification (M=5.04). This also suggests that people who are homeowners without a mortgage are more conscious of insurance risk. Individuals who are homeowners with a mortgage had the highest mean for social risk. This also suggests that homeowners with a mortgage have a higher likelihood of engaging in social risk events. These findings are contrary to a study by Olweny *et al.* (2013), who found homeowners to have a greater likelihood of engaging in risky events than individuals who are renting.

5.6.1.14 Employment status

Table 5.46 presents the results of the one-way ANOVA conducted to identify and analyse the effect of employment status on insurance policyholder risk perception.

Table 5. 46: ANOVA for employment status with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	5.252	4.00	1.31	1.829	0.123
	Within Groups	240.511	335.00	0.72		
	Total	245.762	339.00			
	Between Groups	5.507	4.00	1.38	1.879	0.114

Insurance risk identification	Within Groups	245.436	335.00	0.73		
	Total	250.943	339.00			
Risk perception						
Ethical	Between Groups	15.469	4.00	3.87	2.710	0.030*
	Within Groups	478.003	335.00	1.43		
	Total	493.472	339.00			
Financial	Between Groups	12.985	4.00	3.25	2.016	0.092
	Within Groups	539.496	335.00	1.61		
	Total	552.481	339.00			
Health	Between Groups	23.420	4.00	5.86	2.631	0.034*
	Within Groups	745.417	335.00	2.23		
	Total	768.837	339.00			
Social	Between Groups	39.847	4.00	9.96	4.754	0.001**
	Within Groups	701.986	335.00	2.10		
	Total	741.833	339.00			
Recreational	Between Groups	20.547	4.00	5.14	2.059	0.086
	Within Groups	835.609	335.00	2.49		
	Total	856.156	339.00			
Insurance risk perception						
Insurance risk perception	Between Groups	10.223	4.00	2.56	1.343	0.254
	Within Groups	637.667	335.00	1.90		
	Total	647.890	339.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

As observed in Table 5.46, risk identification and insurance risk identification are not significant at both the 1 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that employment status does not influence the consciousness of risk and insurance of the insurance policyholders.

Only one of the DOSPERT factors relating to risk perception, the social risk, was statistically significant at a 1 percent significance level. Hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies that employment status influences the risk perception of the insurance policyholders. Moreover, two out of five DOSPERT factors, ethical risk and health risk were statistically significant at a 5 percent significance level. Hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 5 percent significance levels. This signifies that employment status influences the risk perception of the insurance policyholders.

However, insurance risk perception is not significant at both the 5 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at both significance levels. This signifies that employment status does not influence the perception of insurance risk of the insurance policyholders. It can, therefore, be concluded that there are no statistical differences between employment status and insurance risk perception.

Table 5. 47: Significant differences between employment status with risk identification and risk perception

Risk perception	Mean				
	Student	Salari ed employed	Self-employed	Looking for work	Retired
Risk identification					
Insurance risk identification	4.04	4.74	4.77	4.38	4.62
Risk perception					
Social	3.83	3.65	2.49	3.00	1.88
Insurance risk perception					
Insurance risk perception	3.67	4.14	4.04	3.48	3.47

As observed in Table 5.47, students had the highest mean value ($M = 3.83$) for social risk indicating a higher likelihood to engage in a risky social event. However, because students had the lowest number of participants, results cannot be concluded. Salaried employed individuals obtained a mean value of $M = 3.65$ for social risk and $M = 4.14$ for insurance risk perception and the highest number of participants compared to the other groups. Conclusively, salaried employed individuals had a higher likelihood of engaging in risk events and felt more exposed to risk currently than 10 years ago compared to the other groups.

5.6.1.15 Type of policy

Table 5.48 shows the results of the one-way ANOVA conducted to identify and analyse the effect of the type of policy an individual has on insurance policyholder risk perception.

Table 5. 48: ANOVA for policy type status with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	12.162	2.00	6.08	8.821	0.000**
	Within Groups	232.339	337.00	0.69		
	Total	244.501	339.00			

Insurance risk identification	Between Groups	2.798	2.00	1.40	1.906	0.150
	Within Groups	247.340	337.00	0.73		
	Total	250.138	339.00			
Risk perception						
Ethical	Between Groups	8.405	2.00	4.20	2.931	0.055
	Within Groups	483.178	337.00	1.43		
	Total	491.583	339.00			
Financial	Between Groups	9.246	2.00	4.62	2.870	0.058
	Within Groups	542.755	337.00	1.61		
	Total	552.001	339.00			
Health	Between Groups	21.355	2.00	10.68	4.829	0.009**
	Within Groups	745.101	337.00	2.21		
	Total	766.457	339.00			
Social	Between Groups	10.970	2.00	5.48	2.527	0.081
	Within Groups	731.524	337.00	2.17		
	Total	742.493	339.00			
Recreational	Between Groups	32.205	2.00	16.10	6.556	0.002**
	Within Groups	827.732	337.00	2.46		
	Total	859.937	339.00			
Insurance risk perception						
Insurance risk perception	Between Groups	43.443	2.00	21.72	12.025	0.000**
	Within Groups	608.733	337.00	1.81		
	Total	652.176	339.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

Table 5.48 shows that risk identification is significant at the 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at a 1 percent significance level ($p < 0.01$). This shows that the policy type of the individuals has influenced the consciousness of risk of the insurance policyholders. However, insurance risk identification is not significant at both the 1 ($p < 0.01$) and 5 ($p < 0.05$) percent significance levels. The null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that the policy type does not influence the consciousness of insurance risk of the insurance policyholders.

Two out of five DOSPERT factors relating to risk perception, health risk and recreational risk was statistically significant at a 1 percent significance level. Hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies that the policy type of the individuals has influenced the risk perception of the insurance policyholders.

Moreover, insurance risk perception was statistically significant at a 1 percent significance level. Hence, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies that the policy type of the individuals has influenced the risk perception of the insurance policyholders. This shows that the policy type of the individuals has influenced the insurance risk perception of the insurance policyholders.

Table 5. 49: Significant differences between policy type with risk identification and risk perception

Risk perception	Mean		
	Short-term insurance	Long-term insurance	Both short-term and long-term insurance
Risk identification			
Risk identification	4.76	4.34	4.40
Risk perception			
Health	2.88	2.25	2.50
Recreational	3.38	2.56	3.00
Insurance risk perception			
Insurance risk perception	4.39	3.52	3.81

According to the mean results presented in Table 5.49 above, it is evident that individuals with short-term insurance obtained the highest mean ($M = 4.76$) for risk identification. This means that they are generally more conscious of risk compared to other groups. Similarly, individuals with short-term achieved the highest mean for health risk ($M = 2.88$) and recreational risk ($M = 3.38$). This indicates that individuals with short-term insurance are more likely to engage and relate to the aforementioned risky factors than the other groups. Moreover, individuals with short-term achieved the highest mean for health risk ($M = 4.39$), showing that they felt more exposed to risk currently than 10 years ago compared to the other groups.

5.6.1.16 Ethnicity

To determine which ethnic group of policyholders is likely to engage in risky events, risk perception by ethnicity was assessed. The analysis of variances tests was conducted to compare the different means amongst the ethnic groups. The mean values of each ethnic group in terms of their likelihood to engage in risky events and their perception of risk is presented in Table 5.50.

Table 5. 50: ANOVA for ethnicity with risk identification and risk perception

		Sum of squares	Df	Mean square	F-ratio	Sig.
Risk identification						
Risk identification	Between Groups	3.995	3.00	1.33	1.842	0.139
	Within Groups	243.655	337.00	0.72		
	Total	247.650	340.00			
Insurance risk identification	Between Groups	15.605	3.00	5.20	7.335	0.000**
	Within Groups	238.987	337.00	0.71		
	Total	254.592	340.00			
Risk perception						
Ethical	Between Groups	2.446	3.00	0.82	0.558	0.643
	Within Groups	492.194	337.00	1.46		
	Total	494.640	340.00			
Financial	Between Groups	1.796	3.00	0.60	0.366	0.777
	Within Groups	550.737	337.00	1.63		
	Total	552.533	340.00			
Health	Between Groups	4.406	3.00	1.47	0.647	0.585
	Within Groups	764.790	337.00	2.27		
	Total	769.195	340.00			
Social	Between Groups	11.180	3.00	3.73	1.714	0.164
	Within Groups	732.738	337.00	2.17		
	Total	743.919	340.00			
Recreational	Between Groups	4.760	3.00	1.59	0.625	0.599
	Within Groups	855.939	337.00	2.54		
	Total	860.699	340.00			
Insurance risk perception						
Insurance risk perception	Between Groups	5.881	3.00	1.96	1.022	0.383
	Within Groups	646.300	337.00	1.92		
	Total	652.181	340.00			
**Significant at 0.01 level						
* Significant at 0.05 level						

As observed in Table 5.50, risk identification is not significant at the 1 and 5 percent significance levels. The null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that ethnicity does not influence the consciousness of risk of the insurance policyholders. However, insurance risk identification is significant at the 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at a 1 percent significance level ($p < 0.01$). This shows that the ethnicity of individuals influences the consciousness of insurance risk of the insurance policyholders.

All DOSPERT factors relating to risk perception, ethical risk, financial risk, health risk, social risk, and recreational risk are not statistically significant at both the 1 and 5 percent significance levels. The null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) can be rejected at both the 1 and 5 percent significance levels. This signifies that ethnicity does not influence the risk perception of the insurance policyholders.

Moreover, insurance risk perception is not significant at both the 5 percent significance level ($p < 0.01$) and at a 5 percent significance level ($p < 0.05$). Therefore, the null hypothesis (H_{01}) cannot be rejected, and the alternative hypothesis (H_{a1}) cannot be concluded at both significance levels. This signifies that ethnicity does not influence the perception of insurance risk of the insurance policyholders. It can, therefore, be concluded that there are no statistical differences between ethnicity and insurance risk perception.

Effect sizes were computed to determine the magnitude of the difference between the mean groups for insurance risk identification. The following guidelines were utilised for the interpretation in Table 5.51 (Cohen, 1988:284):

- 0.2 – small effect
- 0.5 – medium effect
- 0.8 – Large effect.

Table 5. 51: Significant differences between ethnicity and insurance risk identification

Ethnicity	Mean	Effect sizes		
		Asian with	Coloured with	White with
Asian	5.50			
Coloured	5.02	0.59		
White	4.94	0.68	0.10	
African	4.59	1.02	0.48	0.40

As shown in Table 5.51, the propensities of Asian individual policyholders to have a higher consciousness of insurance risk, hence, feel more at ease about having an insurance cover, was statistically significantly different from the propensities of Coloured, White, and African policyholders at $p < 0.01$ level. It can be concluded from Table 5.51 that Asian ($M = 5.50$) insurance policyholders to a greater extent feel at ease about having any insurance cover than Coloured ($M = 5.02$), White ($M = 4.94$), and African (4.59) policyholders. The results also show that Africans feel more at ease about having insurance cover, meaning they are less willing to take risks linked to insurance. Regarding the effect sizes, medium to large practically significant effect sizes was established for the insurance risk consciousness category between

Asian insurance policyholders with Coloured ($d = 0.59$), and White ($d = 0.68$), and African (1.02) insurance policyholders. Similarly, Coloured with White ($d = 0.10$) and African ($d = 0.48$) insurance policyholders obtained practically significant effect sizes. However, White with African ($d = 0.40$) insurance policyholders obtained small, practically non-significant effects on insurance risk identification. The results are contrary to the study done by Grable (1997:15), which concluded that White individuals take more risks than non-White individuals.

5.7 DETERMINE THE RELATIONSHIP OF RISK TOLERANCE ON RISK PERCEPTION OF INSURANCE POLICYHOLDERS

This section aims to determine the relationship of risk tolerance on risk perception of insurance policyholders. This will be achieved by the non-parametric Spearman's rho correlation applied to determine the strength and direction of the relationship between risk tolerance, risk perception and the demographics.

To determine the size effect between the behavioural finance biases and risk perception as recommended by Cohen (1988:81):

- $r = 0.10$ to 0.29 point towards a small/weak strength relationship,
- $r = 0.30$ to 0.49 point towards a medium strength relationship and
- $r = 0.50$ to 1.00 point towards a large/strong strength relationship.

Table 5. 52: Non-parametric correlation of risk tolerance and demographics

Factor	Spearman's correlation	Age	Education level	Income level
Risk tolerance	Correlation coefficient	.299**	-0.092	.127*
	Sig. (2-tailed)	0.000	0.088	0.019
	N	341	341	341
**Correlation significant at the 0.01 level (2-tailed)				
* Correlation significant at the 0.05 level (2-tailed)				

5.7.1 Age

As observed in Table 5.52, risk tolerance had a positive correlation with age. Moreover, the relationship between risk tolerance and age was statistically significant ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{02}) can be rejected and the alternative hypothesis (H_{a2}) can be concluded at the 1 percent significance level. It can be concluded that age influences the risk tolerance of insurance policyholders. The positive relationship shows that the older the insurance policyholders get, the more risk they are willing to take with their

finances. These findings are contrary to a study conducted by Ferreira (2019), who found that the older the participants get, the less risk they are willing to take with their finances.

5.7.2 Education level

From Table 5.52 the correlation coefficient for risk tolerance ($r = -0.092$) indicates a negative and small size effect ($r = 0.10 - 0.29$) association. However, no statistically significant relationship was found at the 1 percent significance level ($p = 0.088 > 0.01$). Hence the null hypothesis (H_{02}) can be accepted, and the alternative hypothesis (H_{a2}) can be rejected at the 1 percent significance level. Consequently, it can be concluded that education level does not influence the risk tolerance of insurance policyholders on their financials. This agrees with a study conducted by Gibson *et al.* (2013), who found no statistically significant relationship between risk tolerance and education level.

5.7.3 Income level

From Table 5.52 above, it can be seen that risk tolerance had a positive relationship with income level. Furthermore, the relationship between risk tolerance and age was statistically significant ($p = 0.019 < 0.05$) at the 5 percent significance level. The null hypothesis (H_{02}) can be rejected, and the alternative hypothesis (H_{a2}) can be concluded at the 5 percent significance level. It can be concluded that income level influences the risk tolerance of insurance policyholders. The positive relationship shows that the more income the insurance policyholders get, the higher their willingness to engage in more risk with their finances. This agrees with a study conducted by Ferreira (2019) which found that individuals earning a higher income are willing to take more risks with their finances than individuals earning lower annual incomes.

Moreover, in order to achieve the second objective, a non-parametric correlation of risk tolerance and risk perception was computed.

Table 5. 53: Non-parametric correlation of risk tolerance and risk perception

Factor	Spearman's correlation	Ethical	Financial	Health	Social	Recreational
Risk tolerance	Correlation coefficient	- .366**	-.440**	- .363**	- .353**	-.392**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	341	341	341	341	341
**Correlation significant at the 0.01 level (2-tailed)						
* Correlation significant at the 0.05 level (2-tailed)						

As observed in Table 5.53 above, all the DOSPERT scale factors measuring risk perception were significant at the 1 percent significance level ($p < 0.01$). Therefore, the null hypothesis (H_{01}) can be rejected, and the alternative hypothesis (H_{a1}) can be concluded at the 1 percent significance level. This signifies that risk tolerance influences the risk perception of the insurance policyholders. Moreover, the correlation coefficients of all the dependent variables (DOSPERT scale) are between ($0.30 < r < 0.49$), indicating a point towards a negative medium strength relationship. It can, therefore, be concluded that there are statistical differences between risk tolerance and risk perception. Table 5.54 below shows the significant differences between risk perception and risk tolerance.

Table 5. 54: Significant differences between risk perception and risk tolerance

Risk perception	Risk tolerance	Mean	Effect size
Ethical	Take substantial financial risks, as I only have insurance on one of my assets	3.24	0.29
	Take above average financial risk, as most of my assets are not covered	3.23	
	Take average financial risks as most of my assets are covered but not comprehensively	2.50	
	Not willing to take any financial risks, I have comprehensive insurance cover	2.18	
Financial	Take substantial financial risks, as I only have insurance on one of my assets	3.16	0.45
	Take above average financial risk, as most of my assets are not covered	3.10	
	Take average financial risks as most of my assets are covered but not comprehensively	2.16	
	Not willing to take any financial risks, I have comprehensive insurance cover	1.73	
Health	Take substantial financial risks, as I only have insurance on one of my assets	3.36	0.32
	Take above average financial risk, as most of my assets are not covered	3.33	
	Take average financial risks as most of my assets are covered but not comprehensively	2.28	
	Not willing to take any financial risks, I have comprehensive insurance cover	1.89	
Social	Take substantial financial risks, as I only have insurance on one of my assets	4.23	0.25
	Take above average financial risk, as most of my assets are not covered	4.04	
	Take average financial risks as most of my assets are covered but not comprehensively	3.27	
	Not willing to take any financial risks, I have comprehensive insurance cover	2.89	
Recreational	Take substantial financial risks, as I only have insurance on one of my assets	3.76	0.58
	Take above average financial risk, as most of my assets are not covered	3.69	
	Take average financial risks as most of my assets are covered but not comprehensively	3.06	
	Not willing to take any financial risks, I have comprehensive insurance cover	2.14	

Table 5.54 shows the mean differences between risk tolerance and risk perception. The results show that for all the determinants of risk perception, the highest means were obtained, indicating that insurance policyholders take substantial financial risks, as they only have insurance on one of their assets. The means ranged between small to large effects, with the highest (0.58) obtained between risk tolerance and recreational risks. Seeing that a negative relationship was found between risk tolerance and risk perception, individuals who are less likely to engage in risky recreational events take substantial risk as they only have insurance on one of their assets.

5.8 IDENTIFY THE ENDOGENOUS FACTORS INFLUENCING THE RISK PERCEPTION OF INSURANCE POLICYHOLDERS

An empirical objective of this chapter is to identify the endogenous factors influencing the risk perception of insurance policyholders in Gauteng. Section 5.9 has already looked at the influence of demographics and risk tolerance on risk perception. The following factors have been identified as endogenous factors and will be discussed in the subsequent sections:

- Financial well-being
- Behavioural finance biases

5.8.1 The influence of financial well-being on the risk perception of insurance policyholders

This section aims to discuss the influence of financial well-being on the risk perceptions of insurance policyholders. This will be achieved by the non-parametric Spearman's rho correlation applied to determine the strength and direction of the relationship between the external events and risk perception of the insurance policyholders.

To determine the size effect between the behavioural finance biases and risk perception as recommended by Cohen (1988:81):

- $r = 0.10$ to 0.29 point towards a small/weak strength relationship,
- $r = 0.30$ to 0.49 point towards a medium strength relationship and
- $r = 0.50$ to 1.00 point towards a large/strong strength relationship.

Table 5. 55: Non-parametric correlation of financial well-being and risk perception

Factor	Spearman's correlation	Ethical	Financial	Health	Social	Recreational
	Correlation coefficient	- .263**	-0.064	-0.053	-0.042	0.009

Financial well-being	Sig. (2-tailed)	0.000	0.237	0.332	0.435	0.867
	N	341	341	341	341	341
**Correlation significant at the 0.01 level (2-tailed)						
* Correlation significant at the 0.05 level (2-tailed)						

As observed in Table 5.55, there exists one positive statistically significant relationship between financial well-being and ethical risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. Consequently, it can be concluded that financial well-being influences ethical risk. Therefore, the results suggest that insurance policyholders whose insurance decisions are influenced by financial well-being have a higher likelihood of engaging in ethical risk. However, no statistically significant relationship was found between financial well-being and financial, health, social and recreational risks. Conclusively, the null hypothesis cannot be rejected, and it can be concluded that financial well-being does not influence financial risk, health, social and recreational risks. This agrees with a study conducted by Dickason and Ferreira (2018), who found that the level of financial well-being influences the likelihood of an individual engaging in some level of risk.

5.8.2 Influence of behavioural finance on the risk perception of insurance policyholders

Behavioural finance is a psychological factor that influences people to make certain decisions with their money. It influences people to either save, spend or invest their earnings (Das & Panja, 2019). DeBondt *et al.* (2010) suggested that if individuals understood the biases attached to behavioural finance, it could help them make better financial decisions. This section aims to discuss the influence of behavioural finance on the risk perception of insurance policyholders. This will be achieved by the non-parametric Spearman's rho correlation applied to determine the strength and direction of the relationship between the external events and risk perception of the insurance policyholders.

To determine the size effect between the behavioural finance biases and risk perception as recommended by Cohen (1988:81):

- $r = 0.10$ to 0.29 point towards a small/weak strength relationship,
- $r = 0.30$ to 0.49 point towards a medium strength relationship and
- $r = 0.50$ to 1.00 point towards a large/strong strength relationship.

Table 5. 56: Non-parametric correlation of financial biases and risk perception

Factor	Spearman's correlation	Representativeness	Regret aversion	Framing	Overconfidence	Availability	Gambler's fallacy	Mental accounting	Loss aversion	Self-control
Ethical	Correlation coefficient	-0.041	-0.034	-0.071	-0.099	0.068	-0.025	-0.052	-.162**	-.361**
	Sig. (2-tailed)	0.454	0.529	0.192	0.069	0.213	0.643	0.340	0.003	0.000
	N	341	341	341	341	341	341	341	341	341
Financial	Correlation coefficient	0.040	-0.007	-0.095	0.044	.118*	0.070	-0.005	-0.061	-.309**
	Sig. (2-tailed)	0.458	0.899	0.080	0.422	0.030	0.199	0.926	0.259	0.000
	N	341	341	341	341	341	341	341	341	341
Health	Correlation coefficient	.184**	.111*	0.020	.156**	.218**	.175**	.140**	0.033	-.228**
	Sig. (2-tailed)	0.001	0.040	0.709	0.004	0.000	0.001	0.010	0.546	0.000
	N	341	341	341	341	341	341	341	341	341
Social	Correlation coefficient	.136*	0.082	-0.055	.143**	-0.015	.115*	0.106	-0.008	-.192**
	Sig. (2-tailed)	0.012	0.133	0.310	0.008	0.789	0.033	0.051	0.883	0.000
	N	341	341	341	341	341	341	341	341	341
Recreational	Correlation coefficient	.197**	0.064	0.002	.177**	.212**	.280**	.193**	0.098	-0.092
	Sig. (2-tailed)	0.000	0.239	0.975	0.001	0.000	0.000	0.000	0.070	0.090
	N	341	341	341	341	341	341	341	341	341

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

5.8.2.1 Representativeness

Regarding the relationship between the representativeness bias and risk perception, Table 5.56 shows a small size effect ($r = 0.10 - 0.29$) on representativeness. Only health risk ($p = 0.001 < 0.01$) and recreational risk ($p = 0.000 < 0.01$) were statistically significant at 1 percent significance level. Therefore, the null hypothesis can be rejected. It can be concluded that at the 1 percent significance level, there is a positive relationship between the representativeness bias and health risk and recreational risk. A small statistically significant relationship was also established between the representativeness bias and social risk ($p = 0.000 < 0.05$) at the 5 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 5 percent significance level. It can be concluded that the representativeness bias influences social risk. This suggests that insurance policyholders who are subject to representativeness bias have a higher likelihood of engaging in health, recreational, and social risks. This agrees with a study conducted by Pompian (2012), who discovered that individuals who are subject to representativeness bias tend to engage in risky events.

5.8.2.2 Regret aversion

Concerning the relationship between regret aversion and risk perception, Table 5.56 shows that only shows a small size effect ($r = 0.10 - 0.29$) was obtained. Health risk ($p = 0.040 < 0.05$) obtained a small statistically significant positive relationship with regret aversion at a 5 percent significance level. Therefore, the null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 5 percent significance level. It can be concluded that regret aversion influences risk perception. There is a positive relationship between the representativeness bias and health risk. This suggests that insurance policyholders who are subject to the regret aversion bias have a higher likelihood of taking high risks. This agrees with the theory in a study by Dickason and Ferreira (2018), which found that individuals who are subject to the regret aversion bias are likely to take average risks.

5.8.2.3 Framing

Regarding the relationship between framing and risk perception, Table 5.56 shows only a small size effect ($r = 0.10 - 0.29$). However, none of the risk factors obtained a statistically significant relationship with framing. Therefore, the null hypothesis (H_{03}) cannot be rejected, and it can be concluded that the framing bias does not influence risk perception. This agrees with a study by Anzel (2020), who found that framing does not influence the likelihood of an individual to take risks.

5.8.2.4 Overconfidence

Concerning overconfidence, Table 5.56 shows that there exists a small size effect ($r = 0.10 - 0.29$). However, a positive statistically significant relationship between the overconfidence bias and health risk ($p = 0.004 < 0.01$), social risk ($p = 0.008 < 0.01$) and recreational risk ($p = 0.001 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. It can, therefore, be concluded that the overconfidence bias influences health risk, social risk, and recreational risk. Therefore, it can be concluded that insurance policyholders who are subject to the regret aversion bias are likely to engage in health risk, social risk, and recreational risk. This is in agreement with a study conducted by Dickason and Ferreira (2018), who found that individuals who are subject to the overconfidence bias are likely to take some level of risks.

5.8.2.5 Availability bias

Regarding the relationship between the availability bias and risk perception, Table 5.56 shows a small size effect ($r = 0.10 - 0.29$). It is also clear that there is a small statistically significant relationship between the availability bias and health risk ($p = 0.000 < 0.01$) and recreational risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. Similarly, a statistically significant relationship between the availability bias and financial risk ($p = 0.030 < 0.05$) at the 5 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 5 percent significance level. In both cases, the null hypothesis can therefore be rejected, and it can be concluded that the availability bias influences financial, health, and recreational risks. Therefore, it can be concluded that insurance policyholders who are subject to the availability bias are likely to engage in financial, health, and recreational risks. These findings agree with a study conducted by Pompian (2012:225), who found that individuals who are subject to the availability bias are likely to take high risks.

5.8.2.6 Gambler's fallacy

Concerning the relationship between the gambler's fallacy bias and risk perception, Table 5.56 shows a small size effect ($r = 0.10 - 0.29$). It is also evident that there is a small statistically significant relationship between the gambler's fallacy bias and health risk ($p = 0.001 < 0.01$) and recreational risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. Likewise, a statistically significant relationship between the availability bias

and social risk ($p = 0.033 < 0.05$) at the 5 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 5 percent significance level. In both cases, the null hypothesis can, therefore, be rejected, and it can be concluded that the gambler's fallacy influences health, social, and recreational risks. Therefore, it can be concluded that insurance policyholders who are subject to the gambler's fallacy bias are likely to engage in health, social, and recreational risks. These findings agree with a study conducted by Pompian (2012:225), who found that individuals who are subject to the gambler's fallacy bias are likely to take high risks.

5.8.2.7 Mental accounting

Regarding mental accounting, Table 5.56 shows a small size effect ($r = 0.10 - 0.29$). However, a positive statistically significant relationship between the overconfidence bias and health risk ($p = 0.010 < 0.01$) and recreational risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. It can be concluded that the mental accounting bias influences health risk and recreational risk. Therefore, it can be concluded that insurance policyholders who are subject to mental accounting bias are likely to engage in health risk and recreational risk. These findings agree with a study conducted by Dickason and Ferreira (2018), who found that individuals who are subject to the mental accounting bias have engaged in some level of risks.

5.8.2.8 Loss aversion

Concerning the loss aversion bias, Table 5.56 shows a small size effect ($r = 0.10 - 0.29$). However, a negative statistically significant relationship between the overconfidence bias and ethical risk ($p = 0.003 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. It can be concluded that the loss aversion bias influences ethical risk. Therefore, it can be concluded that insurance policyholders who are subject to the loss aversion bias are likely to engage in ethical risk. These findings agree with a study conducted by Dickason and Ferreira (2018) who found that individuals who are subject to the loss aversion bias are likely to take low risks.

5.8.2.9 Self-control

Regarding the relationship between the self-control bias and risk perception, Table 5.56 shows a small ($r = 0.10 - 0.29$) to medium size effect ($r = 0.30 - 0.49$). It is also evident that there is

a small statistically significant relationship between the self-control bias and ethical risk ($p = 0.000 < 0.01$), financial risk ($p = 0.000 < 0.01$), health risk ($p = 0.000 < 0.01$) and social risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{03}) can be rejected, and the alternative hypothesis (H_{a3}) can be concluded at the 1 percent significance level. It can be concluded that the self-control bias influences ethical, financial, health, social risks. Therefore, it can be concluded that insurance policyholders who are subject to the self-control bias are likely to engage in ethical, financial, health, social risks. These findings agree with a study conducted by Pompian (2012), who found that individuals who are subject to the self-control bias are likely to take high risks.

5.9 IDENTIFY THE EXOGENOUS FACTORS INFLUENCING THE RISK PERCEPTION OF INSURANCE POLICYHOLDERS

An empirical objective of this chapter is to identify the exogenous factors influencing the risk perception of insurance policyholders in Gauteng. The following factors have been identified as exogenous factors and will be discussed in the subsequent sections:

- Political-legal
- Market fluctuations
- Crime
- Unemployment

5.9.1 The relationship between external events and the risk perception of insurance policyholders

This section aims to discuss the influence of external factors (political-legal, market fluctuations, crime, and unemployment) on the risk perceptions of insurance policyholders. This will be achieved by the non-parametric Spearman's rho correlation applied to determine the strength and direction of the relationship between the external events and risk perception of the insurance policyholders.

To determine the size effect between the behavioural finance biases and risk perception as recommended by Cohen (1988:81):

- $r = 0.10$ to 0.29 point towards a small/weak strength relationship,
- $r = 0.30$ to 0.49 point towards a medium strength relationship and
- $r = 0.50$ to 1.00 point towards a large/strong strength relationship.

Table 5. 57: Non-parametric correlation of Market fluctuations, volatility and international events and risk perception

Factor	Spearman's correlation	Political-legal	Market fluctuations	Crime	Unemployment
Ethical	Correlation coefficient	-0.051	-0.030	-0.033	-0.022
	Sig. (2-tailed)	0.350	0.585	0.539	0.690
	N	341	341	341	341
Financial	Correlation coefficient	0.030	0.028	-0.014	-0.061
	Sig. (2-tailed)	0.575	0.605	0.794	0.263
	N	341	341	341	341
Health	Correlation coefficient	0.027	0.077	-0.007	0.005
	Sig. (2-tailed)	0.619	0.156	0.893	0.922
	N	341	341	341	341
Social	Correlation coefficient	0.061	0.035	0.033	-0.002
	Sig. (2-tailed)	0.262	0.520	0.539	0.973
	N	341	341	341	341
Recreational	Correlation coefficient	.210**	.217**	.183**	.149**
	Sig. (2-tailed)	0.000	0.000	0.001	0.006
	N	341	341	341	341
**Correlation significant at the 0.01 level (2-tailed)					

5.9.1.1 Political-legal

Concerning the relationship between political-legal and risk perception, Table 5.57 shows a small size effect ($r = 0.10 - 0.29$). However, there is a positive, statistically significant relationship between the political-legal factor and recreational risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{04}) can be rejected, and the alternative hypothesis (H_{a4}) can be concluded at the 1 percent significance level. It can be concluded that the political-legal factor influences recreational risk. The results suggest that insurance policyholders whose insurance decisions are influenced by political-legal factors are more likely to engage in recreational risk.

5.9.1.2 Market fluctuations

Regarding the relationship between market fluctuations and risk perception, Table 5.57 exhibits a small size effect ($r = 0.10 - 0.29$). It is evident that a positive statistically significant relationship between the market fluctuation factors and recreational risk ($p = 0.000 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{04}) can be rejected, and the alternative hypothesis (H_{a4}) can be concluded at the 1 percent significance level. It can be concluded that the market fluctuations factor influences recreational risk. Therefore, the results suggest that insurance policyholders whose insurance decisions are influenced by market fluctuations factors have a higher likelihood of engaging in recreational risk.

5.9.1.3 Crime

Concerning the relationship between crime and risk perception, Table 5.57 shows a small size effect ($r = 0.10 - 0.29$). It can be observed that a positive statistically significant relationship between the crime factor and recreational risk ($p = 0.001 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{04}) can be rejected, and the alternative hypothesis (H_{a4}) can be concluded at the 1 percent significance level. It can be concluded that the crime factor influences recreational risk. Therefore, the results suggest that insurance policyholders whose insurance decisions are influenced by crime factors have a higher likelihood of engaging in recreational risk.

5.9.1.4 Unemployment

Regarding the relationship between unemployment and risk perception, it is shown in Table 5.57 that there exists a small size effect ($r = 0.10 - 0.29$). It can be observed that a positive statistically significant relationship between the unemployment factor and recreational risk ($p = 0.006 < 0.01$) at the 1 percent significance level. The null hypothesis (H_{04}) can be rejected, and the alternative hypothesis (H_{a4}) can be concluded at the 1 percent significance level. It can be concluded that the unemployment factor influences recreational risk. Therefore, the results suggest that insurance policyholders whose insurance decisions are influenced by unemployment factors have a higher likelihood of engaging in recreational risk.

5.10 FACTORS INFLUENCING RISK PERCEPTION

To further expands on the influence of the determinant factors of insurance policyholders on risk perception, Spearman's non-parametric correlation was utilised to determine which factors influence the risk perception of insurance policyholders. Subsequently, a regression analysis was conducted to analyse how these factors influence risk perception.

5.10.1 Risk perception non-parametric correlation

Table 5.58 below shows the non-parametric correlation of the determinant factors influencing risk perception of insurance policyholders assuming a 1 percent significance level for a two-tailed level of significance ($p < 0.01$).

Table 5. 58: Non-parametric correlation of risk perception

Determinant factor	Spearman correlation	Risk perception
Age	Correlation coefficient	-.418**
	Sig. (2-tailed)	0.000
	N	341
	Correlation coefficient	.197**

Highest level of education	Sig. (2-tailed)	0.000
	N	341
Annual income	Correlation coefficient	0.020
	Sig. (2-tailed)	0.717
	N	341
Marital status	Correlation coefficient	-0.081
	Sig. (2-tailed)	0.138
	N	341
Networth	Correlation coefficient	0.053
	Sig. (2-tailed)	0.331
	N	340
Policy type	Correlation coefficient	.150**
	Sig. (2-tailed)	0.006
	N	340
Gender	Correlation coefficient	.352**
	Sig. (2-tailed)	0.000
	N	341
Homeownership	Correlation coefficient	-.181**
	Sig. (2-tailed)	0.001
	N	341
Financial well-being	Correlation coefficient	-0.078
	Sig. (2-tailed)	0.149
	N	341
Representativeness	Correlation coefficient	.177**
	Sig. (2-tailed)	0.001
	N	341
Regret aversion	Correlation coefficient	0.084
	Sig. (2-tailed)	0.124
	N	341
Framing	Correlation coefficient	-0.006
	Sig. (2-tailed)	0.910
	N	341
Overconfidence	Correlation coefficient	.150**
	Sig. (2-tailed)	0.006
	N	341
Availability	Correlation coefficient	.189**
	Sig. (2-tailed)	0.000
	N	341
Gambler's fallacy	Correlation coefficient	.184**
	Sig. (2-tailed)	0.001
	N	341
Mental accounting	Correlation coefficient	.140**
	Sig. (2-tailed)	0.010
	N	341
Loss aversion	Correlation coefficient	0.009
	Sig. (2-tailed)	0.875
	N	341
Self-control	Correlation coefficient	-.343**

	Sig. (2-tailed)	0.000
	N	341
Political	Correlation coefficient	.129*
	Sig. (2-tailed)	0.017
	N	341
Market fluctuations	Correlation coefficient	.148**
	Sig. (2-tailed)	0.006
	N	341
Crime	Correlation coefficient	0.079
	Sig. (2-tailed)	0.144
	N	341
Unemployment	Correlation coefficient	0.069
	Sig. (2-tailed)	0.202
	N	341
**Significant level (0.01)		

Table 5.58 shows that the correlation coefficient for age had a medium negative effect ($r = -0.418$) with risk perception, which was statistically significant at a 1 percent significance level ($p < 0.01$). The association between the level of education and risk perception was $r = 0.917$, signifying a small positive linear effect at a 1 percent significance level ($p < 0.01$). Likewise, policy type had a small positive linear association with risk perception ($r = 0.150$), which was statistically significant at 1 percent ($p < 0.01$). A medium positive effect ($r = 0.352$) was obtained for gender and risk perception, which was statistically significant at a 1 percent significance level ($p < 0.01$) and was the highest effect size obtained. The association between the representativeness bias and risk perception was $r = 0.177$, showing a small positive linear effect at a 1 percent significance level ($p < 0.01$). Similarly, the association between overconfidence bias ($r = 0.150$), availability bias ($r = 0.189$), gambler's fallacy bias ($r = 0.184$) and market fluctuations ($r = 0.148$) and risk perception showed a small positive linear effect at 1 percent significance level ($p < 0.01$).

Table 5.58 also shows that annual income, marital status, net worth, financial well-being, regret aversion bias, framing bias, loss aversion bias, political-legal, crime, and unemployment had a small positive and negative linear effect which was not statistically significant at 1 percent significance level ($p < 0.01$). This means that there was no relationship between the factors mentioned above and risk perception. Subsequently, a multiple linear regression analysis was conducted to analyse the determinant factors' influence on the insurance policyholders' risk perception.

5.10.2 Multiple linear regression on risk perception

In order to further expand on the factors influencing risk perception of insurance policyholders, a multiple linear regression was conducted. Table 5.59 shows the regression model summary computed where R^2 shows that the determinant factors explained 45.20 percent of the total variance in risk perception. Moreover, the F-ratio ($p < 0.01$) was statistically significant at the 1 percent significance level, signifying that the variables influence risk perception.

Table 5. 59: Model summary

Model	Sum of squares	Df	Mean Square	R Square	F-value	P-value
Regression	208.156	6	34.693	0.452	45.821	0.000***
Residual	252.126	333	0.757			
Total	460.281	339				

***Significant level (0.01)

As shown in Table 5.60 below, all five determinants were statistically significant at the 1 percent significance level ($p < 0.01$), signifying that they influence the risk perception of insurance policyholders. The variables are explained independently below.

5.10.2.1 Age

The age of insurance policyholders influences their likelihood to engage in risky events. A statistically significant value was obtained for age ($p < 0.000$) at the 1 percent significance level. As shown in Table 5.60, when there is a unit change in age, the likelihood of policyholders engaging in risky events will result in a -0.300 change in the risk perception variable scale.

5.10.2.2 Gender

As observed in Table 5.60, the gender of insurance policyholders influences their risk perception. Gender was significant at a 1 percent significance level ($p < 0.01$). Therefore, a unit change in the age coefficient would result in a -0.256 change in the risk perception variable scale. Therefore, age is the most contributing variable in influencing the risk perception of insurance policyholders.

5.10.2.3 Representativeness

The results in Table 5.60 show that insurance policyholders subject to the representativeness bias would likely engage in risky events. The representativeness bias was significant at a 1

percent significance level ($p < 0.01$). Hence a unit change in the coefficient of the representativeness bias would result in a 0.153 change in the risk perception variable scale.

5.10.2.4 Gambler’s fallacy

Concerning gambler’s fallacy bias, the results in Table 5.60 show that it was statistically significant at a 1 percent significance level ($p < 0.01$). This suggests that a unit change in the coefficient of the gambler’s fallacy bias would result in a 0.158 change in the risk perception variable scale.

5.10.2.5 Self-control

As observed in Table 5.60, insurance policyholders subject to the self-control bias are less likely to engage in risky events. The self-control bias was statistically significant at a 1 percent significant level ($p < 0.01$), indicating that it influences risk perception. A unit change in the self-control bias of insurance policyholders will result in a -0.375 beta coefficient change on the risk perception variable scale.

Table 5. 60: Independent variables model summary

Variables	B	T	P-value
Age	-0.300	-7.081	0.000***
Gender (Male)	0.256	6.174	0.000***
Representativeness	0.153	3.027	0.003***
Gambler’s fallacy bias	0.158	3.014	0.003***
Self-control	-0.375	-8.280	0.000***

***Significant level (0.01)

Table 5.61 summarises the pre-identified factors that contribute to interpreting the risk perception of insurance policyholders and the extent to which each of the factors influences the risk perception of insurance policyholders.

Table 5. 61: Summary of factors influencing risk perception

Constructs	Summary
Endogenous factors	
Demographical factors	
Age	Age contributed significantly towards explaining risk perception to a rather small degree.
Level of education	Level of education contributed significantly towards explaining risk perception to a rather small degree.
Annual income	Annual income contributed significantly towards explaining risk perception to a rather small degree.

Income variability	Income variability contributed significantly towards explaining risk perception to a rather small degree.
Net worth	Net worth contributed significantly towards explaining risk perception to a rather small degree.
Household size	Household size contributed significantly towards explaining risk perception to a rather small degree.
Dependents	Dependents contributed significantly towards explaining risk perception to a rather small degree.
Health status	Health status contributed significantly towards explaining risk perception to a rather small to a medium degree.
Financial knowledge	Financial knowledge contributed significantly towards explaining risk perception to a rather small degree.
Gender	Gender contributed significantly towards explaining risk perception to a rather small degree.
Marital status	Marital status contributed significantly towards explaining risk perception to a rather small degree.
Homeownership	Homeownership contributed significantly towards explaining risk perception.
Employment status	Employment status contributed significantly towards explaining risk perception.
Policy type	Policy type contributed significantly towards explaining risk perception to a rather small degree.
Financial well-being	
Financial well-being	Financial well-being contributed significantly towards explaining risk perception to a rather small degree.
Behavioural finance biases	
Representativeness	Representativeness contributed significantly towards explaining risk perception to a rather small degree.
Regret aversion	Regret aversion contributed significantly towards explaining risk perception to a rather small degree.
Overconfidence	Overconfidence contributed significantly towards explaining risk perception to a rather small degree.
Availability	Availability contributed significantly towards explaining risk perception to a rather small degree.
Gambler's fallacy	Gambler's fallacy contributed significantly towards explaining risk perception to a rather small degree.
Mental accounting	Mental accounting contributed significantly towards explaining risk perception to a rather small degree.
Loss aversion	Loss aversion contributed significantly towards explaining risk perception to a rather small degree.
Self-control	Self-control contributed significantly towards explaining risk perception to a rather small degree.
Exogenous factors	
Market fluctuations, volatility and international events	
Political-legal	Political-legal contributed significantly towards explaining risk perception to a rather small degree.
Market fluctuations	Market fluctuations contributed significantly towards explaining risk perception to a rather small degree.

Crime	Crime contributed significantly towards explaining risk perception to a rather small degree.
Unemployment	Unemployment contributed significantly towards explaining risk perception to a rather small degree.

Source: Author compilation

Regarding Table 5.61, it can be concluded that demographical factors, namely age, level of education, annual income, income variability, net worth, household size, dependents, health status, financial knowledge, gender, marital status, homeownership, employment status and policy type explain risk perception to a small degree. However, health status explains risk perception to a rather small to medium degree. Similarly, the financial well-being of the insurance policyholders explains risk perception to a rather small degree. Behavioural finance explains risk perception to a small degree. Considering market fluctuations, volatility and international events, namely political-legal, market fluctuations, crime and unemployment, explain risk perception to a rather small degree. Overall, Table 5.61 contributed to summarising all the factors explaining risk perception and the degree to which they do so. Therefore, this can be used by insurance companies worldwide to better tailor their insurance products for the policyholders by factoring in the aforementioned factors in drafting the policies.

In order to achieve this, a non-parametric Spearman's correlation was utilised. Additionally, a regression analysis was conducted to determine the factors influencing the risk perception of insurance policyholders. Lastly, as per the theory in Chapter 3, which illustrated Litterer's perception model. It was noted that perception could potentially influence the behaviour of South African insurance policyholders towards certain risk events.

5.11 SYNOPSIS

This chapter aimed to discuss the empirical results and findings of the study. To explain how the empirical objectives were achieved, this chapter presented an analysis and interpretation of the results. Section 5.2 provided a summary of the descriptive information of the final sample of 341 participants.

Section 5.3 provided a further descriptive analysis of the questionnaire, which provided an overview of the data set by calculating the means, standard deviations and percentages. In order to simplify complex data sets, the exploratory factor analysis was utilised and presented in Section 5.4 and applied to Section B (financial well-being), Section D (risk identification), Section E (risk perception scale) and Section F (external or international events) of the

questionnaire. Section 5.5 attended to the hypothesis testing of empirical objectives of the study by outlining the null and alternative hypotheses.

Section 5.6 was aimed to determine the influence of demographics on risk identification and risk perception using conducted t-tests and non-parametric correlation tests. The results suggested that all demographics had a statistically significant relationship with at least one determinant factor of risk identification and risk perception. The relationship of risk tolerance on risk perception of insurance policyholders was discussed in Section 5.7. This chapter identified the endogenous factors influencing the risk perception of insurance policyholders, as discussed in Section 5.8. The results suggested that financial well-being had a statistically significant relationship with ethical risk. The influence of behavioural finance biases on the risk perception of insurance policyholders was outlined. The results suggested that all biases except framing had a statistically significant relationship with at least one determinant factor of risk perception. Chapter 5 also identified the influence of exogenous factors on the risk perception of insurance policyholders (Section 5.9). The results suggested that all exogenous factors had a significant relationship with recreational risk as a determinant of risk perception.

Lastly, Chapter 5 looked at the total risk of all the factors with a positive relation with risk perception (Section 5.10). In order to expand on the analysis of the factors influencing risk perception of insurance policyholders, a multiple linear regression was conducted. Furthermore, an independent model summary was conducted, which suggested that age, gender, representativeness bias, Gambler's fallacy bias and self-control bias influenced the risk perception of insurance policyholders the most.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

Chapter 6 aims to summarise the research study, whereby an overview of the achievement of the primary, theoretical and empirical objectives will be outlined. In order to highlight the contribution of the research study, this chapter presents the main findings of the empirical objectives. Thereupon, the recommendations derived from the research findings will be provided. Moreover, Chapter 6 discusses the limitations of the research study and provides recommendations for future research studies.

6.2 OVERVIEW OF THE STUDY

As discussed in Chapter 1, risk is an integral part of life, and the insurance industry is no different as it is exposed to various risks. Risk is also perceived differently by individuals; hence, insurers ought to be cognizant of the factors influencing their policyholders' risk perceptions to retain clients. Various factors influence the risk perception of insurance policyholders. Chapter 1 provided an introduction and background of the study and formulated the problem statement. Lastly, the primary objective, theoretical objectives and empirical objectives were outlined for the achievement of the purpose of the study.

The primary objective was to investigate the factors influencing the risk perception amongst insurance policyholders in Gauteng.

6.2.1 Theoretical objectives

In order to achieve the primary objective, theoretical objectives were formulated as follows:

- I. Identifying the current economic and political landscape in Gauteng;
- II. Contextualising risk perception; and
- III. Establishing a theoretical link between risk perception of insurance policyholders and their behaviour towards risk.

Chapter 2 aimed at achieving **theoretical objective I**. The chapter commenced with unpacking what risk and risk perception are by reviewing existing literature which included the different types of risk. It was concluded that speculative risk is difficult to insure while pure risk is insurable. Furthermore, an overview of the South African insurance industry. Secondly, the regulation of the insurance industry was discussed. It was found that the South African

insurance industry is guided by two main Acts, the Short-Term Insurance Act 1998 (STIA) and the Long-term Insurance Act 1998 (LTIA). Finally, the insurance industry challenges were discussed to outline the current economic and political landscape in Gauteng, which included crime, unemployment, market fluctuations and political-legal.

Chapter 3 intended to achieve **theoretical objectives II and III**. Litterer's perception model was presented to show the perception formation and it was concluded that the way individuals perceive risk will influence their behaviour towards certain risk events. Moreover, the chapter presented the link between risk perception, risk tolerance, and other factors by reviewing existing literature studies. Lastly, a discussion of risk perception and the external environment was provided.

Chapter 4 focused on accentuating the research design and methodology process applied in this research study. Chapter 4 presented the research design, data collection and the methods used to collect and analyse the data to produce useful results that can be used in future research endeavours. This study followed a quantitative research methodological approach utilising a positivism worldview. The sample size of 341 insurance policyholders was considered and adequate for factor analysis in this study. In order to participate in the study, participants had to be older than 18 years, have some level of education, have an insurance policy and currently residing in Gauteng. A self-administered online questionnaire was utilised to observe COVID-19 regulations.

Chapter 5 provided empirical results and findings of the quantitative analysis. The analysis and interpretation focused on achieving all the empirical objectives and the primary objective of the research study. This chapter further stated the hypothesis to achieve the empirical objectives. The subsequent section summarises the main empirical findings of the study as stated in Chapter 1.

6.3 FINDINGS OF THE STUDY

The primary aim of this study was to analyse the factors influencing the risk perception amongst insurance policyholders in Gauteng. The primary objective was achieved by formulating and achieving the empirical objectives as follows:

6.3.1 Determine how demographical factors influence the risk identification and risk perception of insurance policyholders

This objective was achieved in Section 5.6 in Chapter 5. A non-parametric Spearman correlation test was utilised to determine demographical factors that influence the risk perceptions of insurance policyholders. Risk identification was found to be statistically significant in being influenced by annual income, health status, financial knowledge and the type of policy the individual has. Insurance risk identification was influenced by age, annual income, net worth, financial knowledge and ethnicity of the policyholder. All the factors of the DOSPERT scale as a measure of risk perception (ethical, financial, health, social and recreational risk) were influenced by one or more of the demographical factors. The results further show that insurance risk identification was influenced by age, net worth, health status, financial knowledge, homeownership, and the type of policy of the policyholder. Notably, ethnicity only had one statistical significance with insurance perception, while employment status had one such relationship with the social risk. However, no statistically significant differences were found between religious groups and risk perception at a 1 per cent significance level. These results suggested that demographical factors have some level of influence on the risk perception of insurance policyholders.

6.3.2 Determine the relationship of risk tolerance on risk perception of insurance policyholders

The majority of the participants indicated a willingness to take average financial risks as most of their assets are covered but not comprehensively. This was followed by participants who indicated no willingness to take any financial risks as they had comprehensive insurance cover. To determine the relationship of risk tolerance on risk perception of insurance policyholders, this was achieved by performing a test between risk tolerance and the demographical factors, as shown in Section 5.7. Age and risk tolerance were statistically significant at a 1 percent significance level ($p < 0.01$), while income level was statistically significant at a 5 percent significance level ($p < 0.05$) and a small association. However, no statistical significance was found between education level and risk tolerance.

Moreover, a non-parametric correlation of risk tolerance and risk perception was computed, and risk tolerance and all risk perception determinants were statistically significant at a 1 percent significance level ($p < 0.01$). This suggested that risk tolerance influences risk perception. The means were also computed, and the results showed that the majority of the

insurance policyholders would rather take substantial financial risks, as they only have insurance on one of their assets.

6.3.3 Identifying the endogenous factors that influence risk perception of insurance policyholders in Gauteng

This objective was achieved in Section 5.8 in Chapter 5. It is important to note that demographics and risk tolerance are also endogenous, however, these variables were treated as main objectives for the study. A non-parametric Spearman correlation test was performed to assess the impact of financial well-being on the risk perception of insurance policyholders. Financial well-being was found to be statistically significant with one factor, ethical risk, suggesting that the financial well-being of individuals influence their likelihood to engage in ethical risk.

Moreover, in Section 5.8 of Chapter 5, this objective was achieved by utilising a non-parametric Spearman correlation test to establish and analyse the influence of behavioural finance biases that influence the risk perception of insurance policyholders in Gauteng. The representativeness, overconfidence and the gambler's fallacy biases were statistically significant with health, social and recreational risks. The regret aversion and loss aversion biases were statistically significant with health and ethical risk, respectively. Similarly, the availability bias was statistically significant with financial risk, health risk and recreational risk. On the other hand, mental accounting bias showed statistical significance with health and recreational risks. The self-control bias showed the most statistically significant relationships with ethical risk, financial risk, health risk and social risks. However, no statistical significance was found for the framing bias.

6.3.4 Identify the exogenous factors influencing the risk perception of insurance policyholders

The fourth empirical objective was achieved in Section 5.9 in Chapter 5. A non-parametric Spearman correlation test was utilised to identify the relationship between the current economic and political landscape in South Africa and risk perceptions in Gauteng. The results showed a statistically significant positive relationship between the political-legal factor and recreational risk. Likewise, a statistically significant positive relationship was found between the market fluctuations, volatility and international events factor with recreational risk. A small size effect accompanied this. A statistically significant positive relationship was found between crime and recreational risk. Once more, a statistically significant positive relationship was found between

unemployment and recreational risk. These results suggest that insurance policyholders whose insurance decisions are influenced by the political-legal, market fluctuations, volatility and international events, crime, and unemployment factors have a higher likelihood to engage in recreational risks.

6.4 CONTRIBUTION OF THE STUDY

Insurance risk perception has not been widely studied in South Africa and internationally. Hence there is limited research of studies exploring this research field as most studies have covered bank perception. Therefore, this study makes a significant contribution to the literature and empirical analysis of the insurance industry. This will assist insurers to understand the factors influencing the risk perception of insurance policyholders and how policyholders identify risk. Hence insurance companies can incorporate this analysis to better tailor insurance products and maximise customer satisfaction in all market conditions. Insurance companies can also utilise this research to understand the South African economic and political landscape and how it affects the insurance industry in its entirety. Seeing that retaining customers was a challenge faced by insurers which can put insurers out of business. This research study will help insurers retain clients and ultimately realise higher profits in the future.

6.5 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

It is inevitable to experience limitations during a research study. Several limitations can be noted, considering the literature and empirical analysis provided in the study. The primary data was considered and limited to participants residing in Gauteng only. Accordingly, it can be recommended to engage participants from varying locations, including internationally. This will also bring about a larger sample size as a sample size of only 341 participants was considered. Although prior research studies employed a similar sample size, this can be reviewed for future research utilising larger sample sizes. Future researchers can further perform a pre and post COVID-19 to analyse the change in the risk perception of the policyholders. This research study analysed the influence of demographics, risk tolerance, financial well-being, political-legal, crime, market fluctuations and unemployment on risk perception. However, it can be recommended to incorporate more variables such as the demand for insurance both nationally and internationally in future research studies. Given that this research study followed a quantitative research approach to analyse the factors influencing risk perception. However, it can also be recommended to future researchers to follow mixed approaches by including qualitative interviews.

6.6 CONCLUDING REMARKS

Insurance risk perception is not a new research development and very few researchers have delved into this field. Hence, studies concerning insurance policyholders and the risk perceptions in South Africa are limited. The researcher utilised a theoretical and empirical analysis to achieve the primary objective of the study. The EFA statistical process has been utilised to simplify complicated data sets. Insurers will use the study to better understand their policyholders, retain them and ultimately realise greater profits. Therefore, this study will be able to assist this limited field and pave the way for future researchers worldwide.

REFERENCE LIST

Abass, O. 2018. Effects of Risk Perception on the Demand for Insurance: Implications on Nigerian Road User. *Journal of Risk Management*, 2(4).

Accenture. 2016. Be digital: A R115,2 billion opportunity for South Africa's short-term insurance industry. https://www.accenture.com/t20170707T155858Z_w_/za-en/_acnmedia/PDF-25/Accenture-Be-DigitalPOV.pdf Date of access: 27 July 2020.

Ahmed, A. Kayis, B. Amornasawadwatana, A. 2007. A review of techniques for risk management in projects. *Benchmarking an International Journal*, 14(1):22.

Ainia, A.S.N. & Lutfi, L. 2019. The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making. *Journal of Economics, Business, and Accountancy Ventura*, 21(3):402.

Aiuppa, T. 2001. A Synthesis of Risk Management within A Financial Framework. *Journal of Financial Education*, 27(1): 16.

Alamur, B., Kutbay, A.Y., Koc, F. & Karakas, F. 2018. The impact of perceived risk and risk prosperity on financial well-being: an application on bank employees. https://www.researchgate.net/publication/327978977_The_impacts_of_perceived_risk_and_risk_propensity_on_financial_well-being_an_application_on_bank_employees Date of access: 25 April 2020.

Alwang, J., Siegel, P.B. & Canagarajah, S. 2005. Viewing microinsurance as a social risk management instrument: Potential and limitations. *Journal of Insurance and Risk Management*, 4(7). <http://bimtech.ac.in/J.vol-4.7.html> Date of access: 28 April 2020.

Antonites, A. J. & Wordsworth, R. (2009). Risk tolerance: A perspective on entrepreneurship education. *Southern African Business Review*, 13(3): 69.

Aris. 2019. Explaining the loss minimization principle to reduce further damage. <https://aris-world.com/wp-content/uploads/2019/12/ARiSeNewsletterIssue12December2019.pdf> Date of access: 23 December 2020.

Arthur Williams, C. 1966. Attitudes toward Speculative Risks as an Indicator of Attitudes toward Pure Risks. *Journal of Risk and Insurance*, 33(4):577.

Asiamah, N., Oteng-Abayie, E.F. & Mensah, H.F. 2017. General, Target, and Accessible Population: Demystifying the Concepts for Effective Sampling. *Journal of Quantitative Research*, 22(6).

Aspers, P. & Corte, U. 2019. What is Qualitative in Qualitative Research. *Qualitative Sociology*, 42(2).

Ather, S.M. & Balasundaram, N. 2009. Factor analysis: Nature, mechanism & uses in social and management research. *Journal of cost and management accountant*, 2(1):15.

https://www.researchgate.net/publication/200564629_Factor_Analysis_Nature_Mechanism_Uses_in_Social_and_Management_Researches Date of access: 28 July 2021.

Ayuso, M., Guillen, M., & Nielsen, J. P. 2019. Improving automobile insurance ratemaking using telematics: Incorporating mileage and driver behaviour data. *Journal of transportation*, 46(3): 735. <https://doi.org/10.2139/ssrn.2885214> Date of access: 3 June 2020.

Bajeux-Besnainou, I. & Ogunc, K. 2003. Categorical thinking in stock management: A puzzle? *Journal of Behavioral Finance*, 4 (3).

Balaji, M.S. 2019. Constituents and consequences of smart customer experience in retailing. *Technological Forecasting and Social Change*, 124(2):257.

Bank for International Settlements (BIS). 2011. Principles of the Sound Management of Operational Risk. <https://www.bis.org/publ/bcbs195.pdf> Date of access: 22 September 2020.

Bartlett, J. E., Kotrlik, J. W. & Higgins, C. C. 2001. Organisational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1).

Bazerman, M. H. 1998. *Judgment in managerial decision making*. 4th Ed. New York: John Wiley & Sons, Inc.

Bell, J. 2005. *Doing your research project*. New York: Open University Press.

Bellando, J. 2016. Assessing the financial health of insurance undertakings to protect the insured from the risks to which these firms are exposed: solvency rules. OECD.

Bergold, J. & Thomas, S. 2012. Participatory Research Methods: A Methodological Approach in Motion. *Historical Social Research*, 37(4):191.

Berndt, A. & Petzer, D. 2011. Marketing research. Cape Town: Pearson.

Besar, D., Booth, P., Chan, K., Milne, A., & Pickles, J. 2011. Systemic Risk in Financial Services. *British Actuarial Journal*, 16(2), 195-340. www.jstor.org/stable/41300457n Date of access: 3 May 2020.

Best, A.M. 2019. Best's guide to understanding the insurance industry: An overview for those working with and in one of the world's most interesting and vital industries.

Binder, S. & MuBhoff, J. 2016. *Global Insurance Industry Insights: An in-depth perspective*. 7th Ed. McKinsey&Company.

Blais, A. & Weber, E.U. 2006. A Domain-Specific Risk-Taking (DOSPERT) Scale for adult populations. *Judgement and Decision Making*, 1(1).

https://www.researchgate.net/publication/5140601_A_Domain-Specific_Risk-Taking_DOSPERT_scale_for_adult_populations Date of access: 13 September 2021.

Blais, A.R. & Weber, E.U. 2009. The domain-specific risk taking scale for adult populations: item selection and preliminary psychometric properties. *Judgement and decision making*: 1(1):33-47.

Blalock, H.M. 1963. Correlated independent variables: the problem of multicollinearity. *Social Forces*, 42(2):233-237.

Blanche, M.T., Durrheim, K. & Painter, D. 2006. Research in practice: applied methods for social sciences. Cape Town: UCT Press.

Bonett, D.G. 2014. Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of organisational behaviour*, 36(1).

Born, P. & Viscusi, W.K. 2006. The catastrophic effects of natural disasters on insurance markets. *Journal of risk uncertainty*, 33(1):55.

Boslaugh, S. 2012. *Statistics in a nutshell*. 2nd ed. Sebastopol, USA: O'Reilly Media.

Boyer, M.M. & Gobert, K. 2008. Dynamic Prevention in Short-Term Insurance Contracts. *Journal of Risk and Insurance*, 75(2):289.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1130004 Date of access: 22 August 2020.

Breuer, F. & Reichertz, J. 2001. Standards of social research. *Qualitative Social Research*, 2(3) <http://nbn-resolving.de/urn:nbn:de:0114-fqs0103245> Date of access: 2 May 2021.

Brink, C.H. 2004. *Measuring political risk: Risks to foreign investment*. Aldershot: Ashgate Publishing.

British Standards Institute. 2020. ISO 31000 Risk Management.

<https://www.bsigroup.com/en-GB/iso-31000-risk-management/> Date of access: 23 Aug 2020.

Brown, C. & Seck, S. 2013. Insurance law principles in an international context: compensating losses caused by climate change. https://www.researchgate.net/publication/329850021_Insurance_Law_Principles_in_an_International_Context_Compensating_Losses_Caused_by_Climate_Change Date of access: 13 December 2020.

Brown, S. & Taylor, K. 2007. Education, Risk Preference and Wages. https://www.researchgate.net/publication/24130245_Education_Risk_Preference_and_Wages Date of access: 19 June 2020.

Brown, V.J. 2014. Risk Perception: It's Personal. *Journal of Environmental Health Perspectives*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4181910/> Date of access: 5 May 2020.

Bruggen, E., Hogueve, J. & Holmlund, M. 2017. Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, 79(1): 228.

Bruggen, E.C., Hogueve, J., Holmond, M., Kabadayi, S. & Lofgren, M. 2017. Financial well-being: A Conceptualisation and Research Agenda, *Journal of Business Research*, 79(1):228.

Bubeck, P., Botzen, W.J.W. & Aerts, C.J.H. 2012. A Review of Risk Perceptions and Other Factors that Influence Flood Mitigation Behaviour. *Risk Analysis*, 32(9):1481-1495.

https://www.researchgate.net/publication/329736861_A_Review_of_Risk_Perceptions_and_Other_Factors_that_Influence_Flood_Mitigation_Behavior Date of access: 27 January 2020.

Butt, M., Jamil, N. & Nawaz, R. 2015. The mediating role of risk perception among cognitive biases towards decision to start a new venture. *International Letters of Social and Humanistic Sciences*, 54(5):88-95.

Buzatu, C. 2013. The Influence of Behavioral Factors on Insurance Decision – a Romanian Approach. *Procedia Economics and Finance*, 6(1):31-40.

Byrne, A. & Brooks, M. 2008. *Behavioural finance: theories and evidence*. United States: The research foundation of CFA institute.

Byrne, A. & Utkus, S.P. 2000. Understanding how the mind can help or hinder investment success. <https://www.vanguard.co.uk/documents/portal/literature/behavioural-finance-guide.pdf> Date of access: 23 March 2020.

Calder, A. 2017. *Risk Management*. United Kingdom: IT Governance Publishing. www.jstor.org/stable/j.ctt1wn0skw.10 Date of access: 29 April 2020.

Cant, M., Gerber-Nel, C., Nel, D. & Kotze, T. 2005. *Marketing research*. 2nd ed. Pretoria: Van Schaik.

Chakreeyarat, V.S. 2015. Cultural, Demographic, and Environmental Influences on Risk Perception and Mitigation in the Wildland-Urban Interface. Utah State University: (Thesis-PhD).

Chew, E. Y. T. & Jahari, S. A. 2014. Destination image as a mediator between perceived risks and revisit intention: A case of post-disaster Japan. *Journal of Tourism Management*, 40(1):382. <https://doi.org/10.1016/j.tourman.2013.07.008> Date of access: 2 August 2020.

Chou, R.K. & Wang, Y.Y. 2011. A test of the different implications of the overconfidence and disposition hypotheses. *Journal of Banking & Finance*, 35(8).

Choudhury, G. 2009. New Freedom of Financial Choice. *McClatchy – Tribune Business News*, 15 Aug.

Chowdhury, Y.K. 2007. In Terms of Utmost Good Faith, the Law of Insurance Imposes Strict Obligation on the Insured as Compared to the Insurer: A Literature

Review. https://www.researchgate.net/publication/269114207_In_Terms_of_Utmost_Good_Faith_the_Law_of_Insurance_Imposes_Strict_Obligation_on_the_Insured_as_Compared_to_the_Insurer_A_Literature_Review Date of access: 15 December 2020.

Churchill, G.A. & Brown, T.J. 2004. *Basic marketing research*. Ohio: South-Western Cengage.

Churchill, G.A. 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1):64-73.

Cohen, J.W. 1988. *Statistical power analysis for the behavioural sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates.

Comrey, L.A. & Lee, H.B. 1992. *A first course in factor analysis*. 2nd ed. New Jersey: Lawrence Erlbaum Associates.

Congressional Research Service. 2020. South Africa: Current Issues, Economy, and U.S. Relations. <https://fas.org/sgp/crs/row/R45687.pdf> Date of access: 16 January 2021.

Consumer Financial Protection Bureau (CFP) (2015). Financial well-being: The goal of financial education. <https://www.consumerfinance.gov/data-research/research-reports/financial-well-being/> Date of access: 23 September 2020.

Crane, L., Gantz, G., Isaacs, S., Jose, D. & Sharp, R. 2013. *Introduction to Risk Management: Understanding Agricultural Risks*. 2ND ed. New York: Extension Risk Management Education and Risk Management Agency.

Crane, L., Gantz, G., Isaacs, S., Jose, D. & Sharp, R. 2013. *Introduction to Risk Management: Understanding Agricultural Risks*. 2ND ed. New York: Extension Risk Management Education and Risk Management Agency.

Crane, L., Gantz, G., Isaacs, S., Jose, D. & Sharp, R. 2013. *Introduction to Risk Management: Understanding Agricultural Risks*. 2ND ed. New York: Extension Risk Management Education and Risk Management Agency.

Creswell, J.W. & Plano Clark, V.L. 2011. *Designing and conducting mixed methods research*. 2nd ed. California: SAGE.

Creswell, J.W. 1998. *Qualitative inquiry and research design: choosing among five traditions*. London: SAGE.

Damodaran, A. 2008. *Strategic Risk Taking: A framework for Risk Management*. New Jersey: Pearson Education, Inc.

Das, A.R. & Panja, S. 2019. *Understanding behavioral finance*. Paper delivered at the 5th Management Doctoral Colloquium, India.

https://www.researchgate.net/publication/331009565_UNDERSTANDING_BEHAVIORAL_FINANCE Date of access: 22 September 2021.

Das, A.R. & Panja, S. 2019. *Understanding Behavioural Finance*. Silchar: National Institute of Technology (Thesis-PhD).

Das, U., Davies, N. & Podpiera, R. 2003. *Insurance and issues in financial soundness*. (IMF working paper, WP/03/138). <https://www.imf.org/external/pubs/ft/wp/2003/wp03138.pdf> Date of access 18 November 2020.

Davies, G.B. & Brooks, P. 2014. Risk Tolerance: Essential, behavioural and misunderstood. *Journal of Risk Management in Financial Institutions*.

https://www.researchgate.net/publication/258378890_Risk_Tolerance_Essential_behavioural_and_misunderstood/citation/download Date of access: 4 April. 2020.

De Bondt, W & Bange, M. 1992. Inflation, Money Illusions, and Time Variation in Term Premia. *Journal of Financial and Quantitative Analysis*, 27(4).

DeBondt, W., Forbes, W. & Hamalainen, P. 2010. What can behavioral finance teach us about finance?, *Qualitative research in Financial Markets*, 2(1).

DeCoster, J. 1998. *Overview of factor analysis*. Gordon Palmer: University of Alabama.

Deloitte. 2020. Emerging Markets: Growing insurance challenges with a focus on Africa. https://www2.deloitte.com/za/en/pages/financial-services/articles/emerging_markets_growing_insurance_challenges_with_a_focus_on_africa.html Date of access: 12 January 2021.

- Department of Presidency (South Africa). 2018. Our future – make it work: National Development Plan 2030.
https://www.brandsouthafrica.com/wp_download_viewer.php?file=wp-content/uploads/brandsa/2015/05/02_NDP_in_full.pdf Date of access: 29 January 2020.
- Diacon, S. & Ennew, C. 2001. Consumer Perceptions of Financial Risk. *Journal of Risk and Insurance*, 26(3):389.
- Diacon, S. & Ennew, C. 2001. Consumer Perceptions of Financial Risk. *Journal of Risk and Insurance*, 26(3):389.
- Dickason, Z. & Ferreira, S. 2018. The effect of Gender and Ethnicity of Financial Risk Tolerance in South Africa. *Gender & Behaviour*, 16(1): 10851 – 10862.
- Dickason, Z. & Ferreira, S. 2018. The effect of Gender and Ethnicity of Financial Risk Tolerance in South Africa. *Gender & Behaviour*, 16(1): 10851 – 10862.
- Dickason, Z. 2017. Modelling investor behaviour in the South African context. Vanderbijlpark: NWU (Thesis-PhD).
- Dickinson, G. 1998. The Economic Role of the Insurance Sector in the Risk Transfer - Capital Market Nexus. *Journal of Risk and Insurance*, 2(1):519.
- Diedericks, R. 2015. Incubator services that small service organisations require from a university business incubator. Vanderbijlpark: NWU. (Thesis-PhD).
- Dinnie, D., Bracher, P. & Rodrigues, C. 2013. Ten things to know – insurance regulation in South Africa. <https://www.mondaq.com/southafrica/insurance-laws-and-products/222724/ten-things-to-know--insurance-regulation-in-south-africa> Date of access: 8 December 2020.
- Dinu, A. M. 2013. Risk in financial transactions and financial risk management. *Journal of Social and Behavioral Sciences*, 116 (1): 320.

- Discovery, 2009. Discovery Insure Plan Guide.
<https://www.discovery.co.za/wcm/discoverycoza/assets/car-and-home-insurance/vitalitydrive/discovery-insure-plan-guide.pdf> Date of access: 2 October 2020.
- Discovery. 2020. Funeral Plan. <https://www.discovery.co.za/assets/discoverycoza/financial-advisers-zone/life-insurance/discovery-life-funeral-brochure.pdf> Date of access: 14 August 2020.
- Dohmen, T., Armin, F., Daniel, H. & Uwe, S. 2011. Individual Risk Attitudes: Measurement, Determinants and Behavioural Consequences. *Journal of the European Economic Association*, 9(3): 522.
https://www.researchgate.net/publication/227348767_Individual_Risk_Attitudes_Measurement_Determinants_And_Behavioral_Consequences Date of access: 7 July 2020.
- Du Toit, G.S. & Vivian, R.W. 1995. *Short-Term Insurance*. Johannesburg: Butterworth Publishers.
- Duchon, D., Ashmos, D.P., & Dunegan, K.J. 1991. Avoid decision making disaster by considering psychological bias. *Review of Business*, 13(1):15.
- ECB. 2009. Financial stability review. https://www.ecb.europa.eu/pub/pdf/fsr/art/ecb.fsrart200912en_05.pdf?d92c521966d4230d00f941821cb4e1cc#:~:text=Insurance%20companies%20can%20be%20important,firms%20by%20insuring%20their%20risks Date of access: 29 December 2020.
- Edwards, K. D. 1995. Prospect Theory: A Literature Review. *International Review of Financial Analysis*, 5(1): 19.
- Elmiger, G. & Kim, S. 2003. *Risk Grade Your Investments: Measure Your Risk & Create Wealth*. New Jersey: John Wiley & Sons Hoboken.
- Enu, P., Osei-gyimah, F. & Eleke-Aboagye, P.Q. 2014. Benefits of fire insurance and consequences of noncompliance in Ghana: A study of Dansoman.
https://www.researchgate.net/publication/281264925_BENEFITS_OF_FIRE_INSURANCE_AND_CONSEQUENCES_OF_NONCOMPLIANCE_IN_GHANA_A_CASE_STUDY_OF_DANSOMAN_COMMUNITY Date of access: 4 April 2020.

- Epstein, M. J. & Pava, M.L. 1994. Individual investors' perceptions on the summary annual report: A survey approach. *Journal of Applied Business Research*, 10(3):60.
- Essel, R. & Mostert, F.J. 2013. Political Risk Factors in South Africa: Sources, Analysis and Insurance Flexibility. *Risk governance & control: Financial markets & institutions*, 3(1):34.
- Faber, J. W. 2019. Segregation and the cost of money: Race, poverty, and the prevalence of alternative financial institutions. *Journal of Social Forces*, 98(2): 819 <https://doi.org/10.1093/sf/soy129> Date of access: 17 August 2020.
- Ferreira, L. 2016. South Africa's economic policies on unemployment: A historical analysis of two decades of transition. *Journal of Economic and Financial Sciences*, 9(3).
- Ferreira, S.J. & Dickason-Koekemoer, Z. 2019. The relationship between depositor behaviour and risk tolerance in a South African context. *Advances in Decision Sciences*, 23(3):1-19.
- Ferreira, S.J. 2018. *Reputational risk: depositor behaviour in South Africa*. Vanderbijlpark: North-West University. (Thesis – PhD).
- Ferreira, S.J. 2018. *Reputational risk: depositor behaviour in South Africa*. Vanderbijlpark: North West University. (Thesis - PhD).
- FinMarkTrust. 2019. 2019 Annual Report. <http://finmark.org.za/research-themes/> Date of access: 25 April 2020.
- Finucane, M., Alhakami, A., Slovic, P. & Johnson, S. (2000). The Affect Heuristic in Judgments of Risk and Benefits, *Journal of Behavioral Decision Making*, 13 (1), 1-17.
- Fischhoff, B., Slovic, P., Lichtenstein, S., Read, S., & Combs, B. 1978. How safe is safe enough? A psychometric study of attitudes towards technological risks and benefits. *Journal of Policy Sciences*, 9(1): 127.
- FitchRatings. 2020. <https://www.fitchratings.com/research/sovereigns/fitch-downgrades-south-africa-to-bb-outlook-negative-20-11-2020> Date of access: 2 December 2020.
- Fitzherbert, R. 2003. The identification and measurement of speculative risk. University of Melbourne: UM (Thesis-PhD).

Flynn, J., Slovic, P. & Mertz, C.K. 1994. Gender, Race, and Perception of Environmental Health Risks. *Journal of Risk Analysis*, 14 (6): 1101.

Frey, B.B. 2018. Pragmatic Paradigm. <https://dx.doi.org/10.4135/9781506326139.n534> Date of access: 19 March 2021.

Friedline, T., Chen, Z. & Morrow, S. 2020. Families' Financial Stress & Well-Being: The Importance of the Economy and Economic Environments. *Journal of Family Economic Issues*. <https://doi.org/10.1007/s10834-020-09694-9> Date of access: 15 September 2020.

Fulfer, J.D. & Mailer, P. 2018. Power and Prospect Theory. https://www.researchgate.net/publication/322298064_Power_and_Prospect_Theory Date of access: 12 September 2020.

Gahin, F. 1967. A Theory of Pure Risk Management in the Business Firm. *The Journal of Risk and Insurance*, 34(1):121.

Garling, T., Kirchler, E., Lewis, A. & van Raaij, F. 2009. Psychology, Financial Decision Making, and Financial Crises. *Journal of Psychological Science in the Public Interest*, 10(1): 1-47.

Gastwirth, J.L., Gel, Y.L & Miao, W. 2009. The impact of Levene's test of equality of variances on statistical theory and practice. *Statistical Science*, 1:343-360.

Gatzert, N., Schmit, J., & Kolb, A. 2016. Assessing the Risks of Insuring Reputation Risk. *The Journal of Risk and Insurance*, 83(3): 641.

Ghoodjani, A. 2018. Advanced Statistical Methods and Applications. *Statistica*, 78(2). https://www.researchgate.net/publication/328214659_Book_Advanced_Statistical_Methods_and_Applications Date of access: 22 April 2021.

Gibson, R., Michayluk, D. & Van de Venter, G. 2013. Financial risk tolerance: an analysis of unexplored factors. *Financial Services Review*, 22(1):23-50.

Gilje, E. (2016). Do Firms Engage in Risk-Shifting? Empirical Evidence. *The Review of Financial Studies*, 29(11), 2925. <http://www.jstor.org/stable/44014945> Date of access: 29 September 2020.

Gooding, A. E. 1978. Perceived risk and capital asset pricing. *Journal of Finance*, 33(5): 1401.

Goundar, S. 2012. Research methodology and research method. https://www.researchgate.net/publication/333015026_Chapter_3_-_Research_Methodology_and_Research_Method Date of access: 15 March 2021.

Grable, J. E. & Lytton, R.H. 1998. Investor Risk Tolerance: Testing the Efficacy of Demographics as Differentiating and Classifying Factors. *Financial Counseling and Planning*, 9(1):62.

Grable, J.E. & Joo, S.H. 1999. Factors related to risk tolerance: a further examination. *Consumer Interest Annual*, 45(1):53-58.

Grable, J.E. 1997. *Investor risk tolerance: testing the efficacy of demographics as differentiating and classifying factors*. Blacksburg, VA: Virginia Polytechnic Institute and State University. (Thesis – PhD).

Gravetter, F.J. & Wallnau, L.B. 2014. *Essentials of statistics for the behavioral sciences*. 8th ed. Wadsworth: Cengage Learning.

Green, L. & Baxen, J. 2002. The selection and training of fieldworkers in educational research: A Western Cape inquiry. *South African journal of education*, 22(4):319.

Groth, J.C. & Roberts, A.A. 2001. Legal foundations: Prescription for emerging and transition economies. *European Business Review*, 13(5):302.

Gujarati, D. & Porter, D.C. 2010. *Essentials of Econometrics*. 4th ed. New York: McGraw-Hill.

Guo, L., Arnould, E.J., Gruen, T.W. & Tang, C. 2013). Socializing to Co-Produce: Pathways to Consumers' Financial Well-Being. *Journal of Service Research*, 16 (4): 549.

Gurung, J.B. 2001. Insurance and It's Business in Nepal. *The Journal of Nepalese Business Studies*, 7(1):10.

Gurung, J.B. 2016. Insureds' Perception towards Insurance Services in Pokhara. *The Journal of Business and Hospitality*, 1(1):23. https://www.researchgate.net/publication/310601874_Insureds'_Perception_towards_Insurance_Services_in_Pokhara Date of access: 9 May 2020.

Hair, J.F., Celsi, M.W., Ortinau, D.J. & Bush, R.P. 2013. *Essentials of marketing research*. 3rd. New York: Mcgraw-Hill.

Hair, J.F., Wolfinbarger, M., Ortinau, D.J. & Bush, R.P. 2008. *Essentials of marketing research*. New York: McGraw-Hill.

Halek, M., & Eisenhauer, J. 2001. Demography of Risk Aversion. *The Journal of Risk and Insurance*, 68(1), 1-24.

Hammer, C.S. 2011. The importance of participant demographics. *American Journal of Speech-Language Pathology*, 20(4). DOI:10.1044/1058-0360(2011/ed-04) Date of access: 22 April 2021.

Hammersley, M. 2013. What is Qualitative Research? *Journal of wellbeing, education and language studies*. <http://oro.open.ac.uk/36138/> Date of access: 28 March 2020.

Hang, M., Geyer-Klingeber, J., Rathgeber, A. & Stockl, S. 2018. If,when and how financial decisions affect firm value: a meta-analysis. <https://10.5465/AMBPP.2018.14232abstract> Date of access: 22 September 2020.

Harner, M. M. 2011. Mitigating financial risk for small business entrepreneurs. *Ohio State Entrepreneurial Business Law Journal*, 6(2): 470.

Haslem, J. A. 2003. *Mutual funds: Risk and performance analysis for decision making*. Malden, MA: Blackwell Publishing Ltd.

Herbert, S.A. 1956. Rational Choice and the Structure of the environment. *Psychological Review*, 63(2):129-138.

Hillson, D. & Webster, R.M. 2005. Understanding and Managing Risk Attitude. <http://www.kent.ac.uk/scarr/events/finalpapers/Hillson%20+%20Murray-Webster.pdf> Date of access: 12 May 2020.

- Hinkin, T.R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1):104-121.
- Holcomb, Z.C. 2016. *Fundamentals of Descriptive Statistics*. 1st ed. United Kingdom: Routledge.
- Holm, M. R. Lugosi, P. Croes, R. R. & Torres, E. N. 2017. Risk-tourism, risk-taking and subjective well-being: A review and synthesis. *Journal of Tourism Management*, 63(1):115. doi.org/https://doi.org/10.1016/j.tourman.2017.06.004 Date of access: 2 August 2020.
- Holyoake, J. & Weipers, B. 2002. *Insurance*. 4th ed. Delhi: AITBS Publishers and distributors.
- Holzheu, T. & Lechner, R. 2009. Commercial liability: a challenge for businesses and their insurers. https://www.researchgate.net/publication/316583571_Commercial_liability_a_challenge_for_businesses_and_their_insurers Date of access: 16 April 2020.
- Hoti, S. & McAleer, M. 2004. An Empirical Assessment of Country Risk Ratings and Associated Models. *Journal of Economic Surveys*, 18(4): 539.
- Howard, L.S. 2020. Suddenly there is big demand for pandemic cover, says underwriter. *Insurance Journal*, 14 Apr. <https://www.insurancejournal.com/news/international/2020/04/14/564705.htm> Date of access: 13 June 2020.
- Huang, J., Sialm, C., & Zhang, H. 2011. Risk Shifting and Mutual Fund Performance. *The Review of Financial Studies*, 24(8): 2575. <http://www.jstor.org/stable/20869318> Date of access: 23 July 2020.
- Hyman, M.R. & Sierra, J.J. 2016. Open- versus Close-ended survey questions. https://www.researchgate.net/publication/282249876_Open-_versus_close-ended_survey_questions Date of access: 7 April 2021.

Iacobucci, D. & Churchill, G.A. 2010. *Marketing research: methodological foundations*. 10th ed. Ohio: South-Western Cengage Learning.

Iannello, P., Sorgente, A., Lanz, M. & Antonietti, A. 2020. Financial Well-Being and Its Relationship with Subjective and Psychological Well-Being Among Emerging Adults: Testing the Moderating Effect of Individual Differences. *Journal of Happiness Studies*. <https://doi.org/10.1007/s10902-020-00277-x> Date of access: 22 July 2020.

IBM. 2020. KMO and Bartlett's Test. <https://www.ibm.com/docs/en/spss-statistics/23.0.0?topic=detection-kmo-bartletts-test> Date of access: 27 July 2021.

International Labour Organization. 2019. *Quick guide on interpreting the unemployment rate*. 1st Ed. International Labour Office: Geneva.

Irwin, C.E. 1993. Adolescence and risk taking: how are they related? In: Bell, N.J. & Bell, R.W., eds. *Adolescent risk taking*. Newbury Park, CA: SAGE. pp. 7-28.

Jackson, C. 2020. Insurance and reinsurance in South Africa: Overview. [https://uk.practicallaw.thomsonreuters.com/1-505-2026?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/1-505-2026?transitionType=Default&contextData=(sc.Default)&firstPage=true) Date of access: 22 January 2021.

Jackson, H.E. 2007. Variation in the intensity of financial regulation: Preliminary evidence and potential implications.

Johnson, R.B. & Onwuegbuzie, A.J. 2004. Mixed methods research: a research paradigm whose time has come. *Educational Researcher*, 33(7):14-26.

Joo, S.H. & Grable, J.E. 2004. An Exploratory Framework of the Determinants of Financial Satisfaction. *Journal of Family and Economic Issues*, 25 (1): 25.

Joshi, A., Kale, S., Chandel, S. & Pal, D.K. 2015. Likert Scale: Explored and Explained. *Current Journal of Applied Science and Technology*, 7(4):396.

Junankar, P.N.R. 2015. *Economics of the Labour Market: Unemployment and the Costs of Unemployment*. New York, NY: Oxford University Press.

- Kabir, S.M.S. 2016. *Basic guidelines for research: An introductory approach for all disciplines*. 1st ed. Chittagong: Book Zone Publications.
- Kaboub, F. 2008. Positivist Paradigm. <https://personal.denison.edu/~kaboubf/Pub/2008-Positivist-Paradigm.pdf> Date of access: 22 April 2021.
- Kadoya, Y., Khan, M.S.R., Hamada, T. & Dominguez, A. 2018. Financial literacy and anxiety about life in old age: evidence from the USA. https://www.researchgate.net/publication/322292802_Financial_literacy_and_anxiety_about_life_in_old_age_evidence_from_the_USA Date of access: 13 September 2020.
- Kahneman, D. & Tversky, A. 1979. Prospect theory: An analysis of decision under risk. *Econometrica*, 47(1):263.
- Kaiser, H.F. 1974. An index of factorial simplicity. *Psychometrika*, 39(1): 31-36.
- Kalinda, M. 2020. 4 Challenges facing insurance companies – and how effective PR can help. <https://africacommunicationsgroup.com/4-challenges-facing-insurance-companies-and-how-effective-pr-can-help/> Date of access: 4 January 2021.
- Kaptan, G., Shiloh, S. & Onkal, D. 2013. Values and Risk Perceptions: A Cross-Cultural Examination. *Journal of Risk Analysis*, 33(2):320.
- Kast F.E. & Rosenzweig, J.E. 1970 *Organizations and management: A systems approach*. New York: McGraw-Hill.
- Kast F.E., & Rosenzweig, J. E. 1985. *Organization and management: A systems and contingency approach*. 4th Ed. New York: McGraw-Hill.
- Kendrick, R. 2009. *Risk Assessment*. United Kingdom: IT Governance Publishing. www.jstor.org/stable/j.ctt5hh6kf.20 Date of access: 27 April 2020.
- King Price. 2019. Policy Schedule. <https://www.kingprice.co.za/Content/documents/King-price-insurance-example-policy.pdf> Date of access: 16 January 2021.
- Kingdon, G. & Knight, J. 2004. Unemployment in South Africa: The Nature of the Beast. *Journal of World Development*, 32(3):391.

- Kivunja, C. & Kuyini, A.B. 2017. Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, 6(5):27.
- Klen, R.W. 2008. An Overview of the Insurance Industry and Its Regulation. Georgia State University: (Thesis-PhD).
- Komitete, R., Komitet, R.W.F.U. & Rada, P. Risk perception in financial and non-financial entities. http://www.sbc.org.pl/Content/81793/SE_127.pdf Date of access: 27 July 2020.
- Koonce, L., McAnally, M. L., & Mercer, M. 2003. How do investors judge the risk of financial items? Working paper.
- Kowo, S.A., Olalekan, S.O. & Popoola, M.A. Impact of external business environment on organisational performance. https://www.researchgate.net/publication/336320140_IMPACT_OF_EXTERNAL_BUSINESS_ENVIRONMENT_ON_ORGANIZATIONAL_PERFORMANCE Date of access: 22 September 2020.
- KPMG. 2020, Resilience The South African Insurance Industry Survey 2020. <https://assets.kpmg/content/dam/kpmg/za/pdf/pdf2020/south-african-insurance-survey-2020.pdf> Date of access: 28 November 2020.
- Kumar, S. 2016. Does Health Influence Risk Preference? Department of Health Policy and Management.
- Kumar, V., Aaker, D.A. & Day, G.S. 2002. *Essentials of marketing research*. New York: John Wiley.
- Kunle, O.A., Adebowale, A.O. & Francis, D.S. 2018. Effects of Risk Perception on the Demand for Insurance: Implications on Nigerian Road Users. *Journal of Emerging Trends in Economics and Management Sciences*, 2(4):256-290.
- Kunreuther, H. & Pauly, M. 2004. Neglecting disaster: Why don't people insure against large losses? *Journal of Risk and Uncertainty*. *Journal of Risk and Uncertainty*, 28(1):5.

- Kutbay, A. Y., Koc, F., Karakas, F. & Alamur, B. 2018. The effects of risk propensity on financial well-being: an application on banking employees. <https://www.researchgate.net/publication/327500819> Date of access: 30 September 2020.
- Lai, F. 2014. Examining the Dimensions of Enterprise Risk Management Implementation Framework, Its Challenges and Benefits: A Study on Malaysian Public Listed Companies. *Journal of Economics, Business and Management*, 2(2): 81.
- Leavy, P. 2017. *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*. 2nd ed. New York: The Guilford Press.
- Leibbrandt, M., Woolard, I., McEwen, H. & Koep, C. 2008. Employment and Inequality Outcomes in South Africa. <https://www.oecd.org/employment/emp/45282868.pdf> Date of access: 12 January 2021.
- Leon, A.K. Pfeifer, C. 2013. *Religious Activity, Risk Taking Preferences and Financial Behaviour: Empirical Evidence from German Survey Data*. (Lunneburg working paper, WP/269). https://www.leuphana.de/fileadmin/user_upload/Forschungseinrichtungen/ifvwl/WorkingPapers/wp_269_Upload.pdf Date of access: 7 July 2020.
- Linneberg, M.S. & Korsgaard, S. 2019. Coding qualitative data: a synthesis guiding the novice. *Qualitative Research Journal*, 19(3).
- LiPuma, E., & Lee, B. 2004. *The World of Risk: Financial Derivatives and the Globalization of Risk*. London: Duke University Press.
- Lusardi, A. 2012. Financial Literacy and Financial Decision-Making in Older Adults. *Journal of the American Society of Aging*, 36 (2): 25.
- Luthans, F. 1998. *Organizational Behavior*. 8th ed. Boston Massachusetts: McGraw Hill.
- Mabalane, M.D. 2015. *Cultural and demographic differences in financial risk tolerance*. Pretoria: University of Pretoria. (Dissertation – Masters).

MacCallum, R.C., Widaman, K., Zhang, S. & Hong, S. 1999. Sample Size in Factor Analysis. *Journal of Psychological Methods*, 4(1):84.

Mahdzan, N.S. & Diacon, S. Protection Insurance and Financial Wellbeing. https://www.researchgate.net/publication/275209568_Protection_Insurance_and_Financial_Wellbeing Date of access: 13 October 2020.

Malhotra, N.K. 2010. *Marketing research: an applied orientation*. 6th ed. New Jersey: Prentice-Hall.

Malhotra, N.K., Birks, D.F. & Wills, P. 2012. *Marketing research: an applied approach*. 4th ed. England: Pearson.

Malhotra, N.K., Birks, D.F. & Wills, P. 2012. *Marketing research: an applied approach*. 4th ed. England: Pearson.

Malhotra, N.K., Nunan, D. & Birks, D.F. 2017. *Marketing research: an applied approach*. 5th ed. England: Pearson.

Malone, K., Stewart, S.D., Wilson, J. & Korsching P.F. 2010. Perceptions of Financial Well-Being among American Women in Diverse Families. *Journal of Family and Economic Issues*, 31(1): 63.

Manez, M., Carmona, M., Haro, D. & Hanger, S. 2018. Risk Perception. *International Institute of Applied Systems Analysis*, 2(5): 52.

Manikandan, S. 2011. Measures of dispersion. *Journal of Pharmacology and Pharmacotherapeutics*, 2(4).
https://www.researchgate.net/publication/51743948_Measures_of_dispersion Date of access: 22 March 2021.

Maree, K., Creswell, J.W., Ebersöhn, L., Eloff, I., Ferreira, R., Ivankova, N.V., Jansen, J.D., Nieuwenhuis, J., Pietersen, J., Plana Clark, V.L. & Van der Westhuizen, C. 2011. *First steps in research*. 9th ed. Pretoria: Van Schaik.

Mason, R.B. 2007. The external environment's effect on management and strategy: A complexity theory approach.
https://www.researchgate.net/publication/32116512_The_external_environment's_effect_on_

management_and_strategy_A_complexity_theory_approach Date of access: 22 September 2020.

Matemane, R. & Wentzel, R. 2019. Integrated reporting and financial performance of South African listed banks. *Banks and Bank Systems*, 14(2).

McDaniel, C. & Gates, R. 2013. *Marketing research*. 9th ed. Singapore: John Wiley.

Medyanik, O. 2020. The Effect of Financial Anxiety on the Insurance Behavior of Russian Citizens in the Context of the 2019-nCoV Pandemic. *Journal of Behavioral Sciences*.
<https://doi:10.20944/preprints202008.0012.v1>

Miller, A.S. 2000. Going to hell in Asia: the relationship between risk and religion in a cross cultural setting. *Review of Religious Research*, 42(1).

MiWay. 2019. 14 May. *6 Factors That Influence Your Car Insurance Premium*. [Blog post]. <https://www.miway.co.za/blog/short-term-insurance/6-factors-that-influence-your-car-insurance-premium> Date of access: 14 January 2021.

Moen, B., Sjoberg, L. & Rundmo, T. 2004. *Explaining risk perception: An evaluation of the risk perception paradigm in risk perception research*. Norway: C Rotunde Publishers.

Moodley, A. 2019. Digital Transformation in South Africa's Short-Term Insurance Sector: Traditional Insurers' Responses to the Internet of Things (IoT) and Insurtech. *The African Journal of Information and Communication*, 24(24):16.

Mooi, E., Sarstedt, M. & Mooi-Reci, I. 2018. *Market research: the process, data and methods using Stata*. Singapore: Springer.

Morgan, D. L. 2014. Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(1).

Muposhi, A. 2015. Antecedents of green consumer buyer behaviour, selection attributes of generation y consumers and the relationship with future behavioural intentions. Vanderbijlpark: NWU. (Thesis-PhD).

Musa, M.M., Amirudin, R. & Sofield, T. 2015. Influence of External Environment Factors on the Success of Public Housing Projects in Developing Countries. *Journal of Construction Economics and building*, 15(4):30.

Myers, M.D. 2013. Qualitative research in information systems.
https://www.researchgate.net/publication/220260372_Qualitative_Research_in_Information_Systems Date of access: 12 April 2021.

Naughton, T. 2002. The winner ... behavioural finance? *Journal of Financial Services Marketing*, 7(2): 101. <https://link.springer.com/article/10.1057/palgrave.fsm.4770077> Date of access: 14 October 2020.

Ndlela, Q.G.M. 2020. Crime in South Africa. *Journal of crime law and social change*, 1(1):22.

Neelankavil, J.P. 2015. International business research. Armonk, NY: M.E Sharpe.

Njengomir, V. & Miskic, M. 2018. Insurance companies' insurance intermediation.
https://www.researchgate.net/publication/327839351_Insurance_companies'_financial_intermediation Date of access: 22 January 2021.

Noussair, C., Stefan, T.T., Gijs, K. & Vellekoop, N. 2012. Risk Aversion and Religion.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.867.6979&rep=rep1&type=pdf> Date of access: 7 July 2020.

NWU (North-West University). 2016. Manual for postgraduate studies.
<http://library.nwu.ac.za/sites/library.nwu.ac.za/files/files/documents/manualpostgrad.pdf> Date of access: 21 March 2020.

OECD. 2017. Technology and innovation in the insurance sector.
<https://www.oecd.org/pensions/Technology-and-innovation-in-the-insurance-sector.pdf> Date of access: 30 January 2021.

OECD. 2020. Responding to the COVID-19 and pandemic protection gap in insurance. <https://www.oecd.org/coronavirus/policy-responses/responding-to-the-covid-19-and-pandemic-protection-gap-in-insurance-35e74736/> Date of access: 19 October 2020.

OECD. 2020. Tackling coronavirus (COVID-19): Contributing to global effort. <https://www.oecd.org/coronavirus/en/> Date of access: 1 September 2020.

Olsen, R. A. & Cox, C. M. 2001. The Influence Of Gender On The Perception And Response To Investment Risk: The Case Of Professional Investors. *The Journal of Psychology and Financial Markets*, 2(1):29.

Olsen, R. A. 1997. Investment Risk: The Experts' Perspective. *Financial Analysts Journal*, 53(1): 62

Olsson, N.O.E. Spejelkavik, I. 2014. Assumption surfacing and monitoring as a tool in project risk management. *International Journal of Project Organisation and management*, 6(2):197.

Olweny, T., Namusonge, G.S. & Onyango, S. 2013. Financial attributes and investor risk tolerance at the Nairobi securities exchange - a Kenyan perspective. *Asian Social Science*, 9(3).

Otto, T. & Henderson, G. 2005. South African financial markets. Pietermaritzburg, South Africa: Profile Media.

Outreville, J.F. 1998. *Theory and Practice of Insurance: The Meaning of Risk*. New York City: Springer Publishers.

Outreville, J.F. 2013. Risk Aversion, Risk Behaviour and Demand for Insurance: A Survey. *Journal of Insurance Issues*, 37(2):158.

Padua, M., Santos, J.M. Horta, H. 2013. Is there a link between education, risk perception, and health outcomes in diabetes in the context of primary intervention among the elderly population.

https://www.researchgate.net/publication/304825136_Is_there_a_link_between_education_ri

sk_perception_and_health_outcomes_in_diabetes_in_the_context_of_primary_intervention_among_the_elderly_population Date of access: 22 June 2020.

Pallant, J. 2007. *SPSS survival manual*. 3rd ed. New York: McGraw-Hill.

Pallant, J. 2013. *SPSS survival manual*. 5th ed. England: McGraw Hill.

Pallant, J. 2020. *SPSS survival manual: a step by step guide to data analysis using SPSS*. 7th ed. England: McGraw Hill.

Palmer, S. 1990. Indemnity in the London Marine insurance market.

Pan, W. 2016. Irrational Rationality: Decision Making in Aspects of Time. *International Journal of Management and Applied Sciences*, 2(8):98.

Panitchpakdi, S. 2007. Trade and development aspects of insurance services and regulatory frameworks. https://unctad.org/system/files/official-document/ditctncd20074_en.pdf Date of access: 21 November 2020.

Park, Y.S., Konje, L. & Artino, A. 2020. The Positivism Paradigm of Research. *Academic Medicine*, 95(5).

Parveen, H. & Showkat, N. 2017. Research ethics.

https://www.researchgate.net/publication/318912804_Research_Ethics Date of access: 4 March 2021.

Patel, J.K. 2019. Principles of insurance. https://www.researchgate.net/publication/334821596_principles_of_insurance Date of access: 5 January 2021.

Paul, S. & Peters, E. 2006. Risk perception and affect. *Current directions in psychological science*, 15(6):322-325.

Petar, C. & Sanja, S.M. 2010. Skewness and Kurtosis in Function of Selection of Network Traffic Distribution.

https://www.researchgate.net/publication/49619305_Skewness_and_Kurtosis_in_Function_of_Selection_of_Network_Traffic_Distribution Date of access: 21 March 2021.

Pham, L. 2018. A Review of key paradigms: positivism, interpretivism and critical inquiry. https://www.researchgate.net/publication/324486854_A_Review_of_key_paradigms_positivism_interpretivism_and_critical_inquiry Date of access: 13 April 2021.

Pinegar, J .M. & Ravichandran, R. 2003. Investors' perceptions of corporate control in Mexico: Evidence from sibling ADRs. *Journal of Financial and Quantitative Analysis*, 38(1):230.

Plous, S. 1993. *The psychology of judgment and decision making*. New York: McGraw-Hill, Inc.

Pompian, M.M. 2016. Risk profiling through a behavioral finance lens. *Research Foundation Briefs*, 2(1):22.

Porter, K. 2007. The legal environment of insurance.

https://www.theinstitutes.org/hf.php?page=webcontact.lms_redirect&iep=20110611235708&p_type=ACCESS Date of access: 5 May 2020.

PWC. 2015. Africa insurance trends. <https://www.pwc.com/ng/en/assets/pdf/nigeria-insurance-survey.pdf> Date of access: 17 January 2020.

PwC. 2019. Being a smarter risk taker through digital transformation: 2019 Risk in review study.

PWC. 2019. IFRS 17, Insurance Contracts: An illustration.

<https://www.pwc.com/id/en/publications/assurance/ifrs-17-insurance-contracts.pdf> Date of access: 30 January 2021.

PwC. 2020. COVID-19: Impacts to business. <https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19.html> Date of access: 9 October 2020.

PWC.2016. Insurance through challenging times Insurance industry analysis. <https://www.pwc.co.za/en/assets/pdf/insurance-industry-analysis-2016pdf.pdf> Date of access: 22 November 2020.

Quinlan, C. 2011. *Business research methods*. China: Cengage learning.

- Quinlan, C., Babin, B., Carr, J., Griffin, M. & Zikmund, W.G. 2015. *Business research methods*. United Kingdom: Cengage Learning.
- Rao, S. S. & Metts, G. 2003. Electronic commerce development in small and medium sized enterprises: a stage model and its implications. *Business Process Management Journal*, 9(1): 11.
- Raphael, S. & Winter-Ebmer, R. 2001. Identifying the Effect of Unemployment on Crime. *The Journal of Law & Economics*, 44(1)259.
- Redda, E.H. 2015. Electronic banking services in South Africa: Service quality scale development and validation. North-West University: (Thesis-PhD).
- Rejda, G.E., McNamara, M.J. & Rabel, W.H. 2017. *Principles of Risk Management and Insurance*. 14th ed. United States of America: Pearson Education.
- Remler, D.K. & Van Ryzin, G.G. 2011. *Research methods in practice: strategies for description and causation*. London: Sage.
- Rennebood, L. & Spaenjers, C. 2012. Religion, economic attitudes, and household finance. *Oxford Economic Papers*, 64(1): 103-124.
- Repullo, R. 2005. Liquidity, Risk Taking, and the Lender of Last Resort. *International Journal of Central Banking*, 1(2):47
- Ricciardi, V. & Rice, D. 2014. Risk Perception and Risk Tolerance. *Journal of Education & Technology Journal*, 2(2): 75.
- Ricciardi, V. & Simon, H. 2000. What is Behavioural Finance.
https://www.researchgate.net/publication/277704537_Risk_Perception_and_Risk_Tolerance
 Date of access: 25 April 2020.
- Ricciardi, V. 2004. A Risk Perception Primer: A Narrative Research Review of the Risk Perception Literature in Behavioral Accounting and Behavioral Finance. Goucher College Department of Business Management WP 02.02.) <http://ssrn.com/abstract=566802> Date of access: 12 May 2020.
- Ricciardi, V., & Simon, H. K. 2000. What is behavioral finance? *The Business, Education and Technology Journal*, 2, (1): 26.

Rocheteau, G. 2006. Understanding Unemployment. https://www.researchgate.net/publication/5028734_Understanding_Unemployment Date of access: 22 January 2021.

Rohrmann, B. & Renn, O. 2000. Risk Perception Research. https://www.researchgate.net/publication/279407485_Risk_Perception_Research Date of access 15 August 2020.

Rossini, L. & Maree, J. 2005. The business of financial advice: a guide for financial advisers to building a service-based business. Cape Town: Juta.

Roszkowski, M.J., Davey, G. 2010. Risk Perception and Risk Tolerance Changes Attributable to the 2008 Economic Crisis: A Subtle but Critical Difference. *Journal of Financial Service Professionals*. https://www.researchgate.net/publication/228898367_Risk_Perception_and_Risk_Tolerance_Changes_Attributable_to_the_2008_Economic_Crisis_A_Subtle_but_Critical_Difference Date of access: 25 April 2020.

Rubin, A., and Babbie, E. R. 2017. *Research methods for social work*. 9th ed. Belmont: Wadsworth

Sachse, K., Jungermann, H. & Belting, J.M. 2012. Investment Risk – The Perspective of Individual Investors. *Journal of Economic Psychology*, 33(1):437.

Samuels, P. 2017. Advice on exploratory factor analysis. *Research Gate*, 1-7.

Sanlam, 2015. Cumulus Echo: Retirement Annuity. [https://www.sanlam.com/Sanlam%20Shared%20Documents/\[823\]%20CE%20RA%2003-2015.pdf](https://www.sanlam.com/Sanlam%20Shared%20Documents/[823]%20CE%20RA%2003-2015.pdf) Date of access: 21 July 2020.

Sargent, T.J. & Wallace, N. 1974. *Rational Expectations and the Theory of Economic Policy*. (Working paper, WP/29). <https://www.minneapolisfed.org/research/wp/wp29.pdf> Date of access: 10 April 2020.

Schich, S. 2009. Insurance Companies and the Financial Crisis. <https://www.oecd.org/pensions/insurance/44260382.pdf> Date of access: 18 November 2020.

Schulmerich, M., Leporcher, Y. & Eu, C. 2015. *Applied Asset and Risk Management: A guide to Modern Portfolio Management and Behavior-Driven Markets*. New York City: Springer Publishers.

Schurer, S. 2015. Lifecycle patterns in the socioeconomic gradient of risk preferences. *Journal of Economic Behavior & Organization*, 119(1):482-495.

Schwandt, T. 1994. Constructivist, Interpretivist Approaches to Human Inquiry. https://www.researchgate.net/publication/232477264_Constructivist_Interpretivist_Approaches_to_Human_Inquiry Date of access: 11 April 2021.

Schwartz, H. 1987. Perception, judgment, and motivation in manufacturing enterprises: Findings and preliminary hypotheses from in-depth interviews. *Journal of Economic Behaviour and Organization*, 8(1):543.

Schwartz, H. 1998. *Rationality gone awry? Decision making inconsistent with economic and financial theory*. Westport, Connecticut: Greenwood Publishing Group.

Scotland, J. 2012. Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, 5(9), pp. 9–16.
<https://doi.org/10.5539/elt.v5n9p9> Date of access: 27 March 2021.

Shahzad, B. 2010. *Application of Risk Identification, Mitigation and Avoidance Model to effectively handle risks*. Paper delivered at the 2nd International Conference on Computational Intelligence Communication Systems and Networks (CICSyN 2010), Liverpool city.
https://www.researchgate.net/publication/234552080_Application_of_Risk_Identification_Mitigation_and_Avoidance_Model_to_effectively_handle_risks/stats Date of access: 22 July. 2020.

Shiller, R. 2014. Speculative Asset Prices. *The American Economic Review*, 104(6): 1486-1517. www.jstor.org/stable/42920857 Date of access: 9 May 2020.

Sibindi, A. & Zingwevu, E. 2015. Does the Regulation of the Insurance Industry have a Pernicious Effect on Innovation by the Sector in South Africa? *Journal of Governance and Regulation*, 4(3):96.

Simsek, A. 2013. Speculation and Risk Sharing with new Financial Assets. *The Quarterly Journal of Economics*, 128(3): 1365. www.jstor.org/stable/26372525 Date of access: 2 May 2020.

Singh, H.B. 2009. *Banking and Insurance*. 4th ed. Kathmandu: Asia Publications Ltd.

Sinindi, A. & Zingwevu, E. 2015. Does the Regulation of insurance Industry have a Pernicious Effect on Innivation by the Sector in South Africa? *Journal of Governance and Regulation*, 4(3):96.

Sjoberg, L. 2000. Factors in risk perception.

https://www.researchgate.net/publication/271767735_Factors_in_risk_perception Date of access: 20 October 2020.

Skipper Jr, H.D. 2001. The taxation of life insurance policies in OECD countries: implications for tax policy and planning. *Journal of Economic Co-operation and Development* 1(1):5 <https://www.oecd.org/finance/insurance/1815326.pdf> Date of access: 15 January 2021.

Skipper, H. D. 1997. The Role of Insurance in Development: An Economic Perspective. *Singapore International Insurance and Actuarial Journal*, 1(1):17.

Slovic, P. 2000. *The perception of risk*. London: Earthscan Publications Ltd.

Sottilotta, C. 2012. Political Risk: Concepts, Definitions, Challenges. Paper delivered at the school of government annual conference of Rome,

Carli. https://www.researchgate.net/publication/267736283_Political_Risk_Concepts_Definitions_Challenges#fullTextFileContent Date of access: 8 January 2021.

Sreejesh, S., Sanjay, M. & Anusree, M.R. 2014. Questionnaire design.

https://www.researchgate.net/publication/316807746_Business_Research_Methods Date of access: 28 March 2021.

State of California Department of Insurance. 2018. *Important California Laws that Pertain to Property Insurance Policies after a Declared Disaster*. <http://www.insurance.ca.gov/0400-news/0100-press-releases/2018/upload/nr086-2018CALaw.pdf> Date of access: 1 April 2020.

Statistics solutions. 2021. Cronbach's Alpha. <https://www.statisticssolutions.com/cronbachs-alpha/> Date of access: 30 August 2021.

StatsSA. 2019. General Household Survey.

<http://www.statssa.gov.za/publications/P0318/P03182018.pdf> Date of access: 25 April 2020.

Struwig, F.W. & Stead, G.B. 2010. *Planning, designing and reporting research*. 7th ed. Cape Town: Pearson.

Sund, B., Svensson, M. & Andersson, H. 2017. Demographic determinants of incident and experience and risk perception: Do high-risk groups accurately perceive themselves as high risk? *Journal of Risk Research*, 20(1):99. <https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/by/andersson/demographic.pdf> Date of access: 3 April 2020.

Sung, J. & Hanna, S.D. 1997. *Factors Related to Risk Tolerance*.

https://www.researchgate.net/publication/228581248_Factors_Related_to_Risk_Tolerancen Date of access: 26 June 2020.

Sutton I. 2010. *Process Risk and Reliability Management: Operational Integrity Management*. Elsevier, Oxford, Burlington.

Swanepoel, J.W.H., Swanepoel, C.J., Van Graan, F.C., Allison, J.S., Weiderman, H.M. & Santana, L. 2006. *Elementary statistical methods*. 1st ed. Potchefstroom: Platinum Press.

SwissRe. 2019. Machinery Insurance. https://www.swissre.com/dam/jcr:67af69c6-4cd5-4938-8bff-b287897c5d91/pub_machinery_insurance_en.pdf Date of access: 20 November 2020.

Taherdoost, H. 2016. *Sampling Methods in Research Methodology: How to Choose a Sampling Technique for Research*.

https://www.researchgate.net/publication/319998246_Sampling_Methods_in_Research_Methodology_How_to_Choose_a_Sampling_Technique_for_Research Date of access: 15 March 2021.

- Tavares, L.V. 2002. A review of the contribution of operational research to project management. *European Journal of Operational Research*, 136(1):18.
- The Department of Justice and Constitutional Development (South Africa). 2018. Insurance Act, 2017 (Act no. 32 of 2017): (Notice 631). *Government Gazette*, 41388, 18 January.
- The Global Competitiveness Report. 2019. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf Date of access: 30 November 2020.
- Tom, S. 2021. Flood-hit provinces fear major job losses, crop damage. <https://www.foodformzansi.co.za/flood-hit-provinces/> Date of access: 22 January 2021.
- Tulai, H., Solovastru, M.S. & Buicu, F. 2009. Criteria of Analysis of a Life Insurance Contract. *Management in Health*, 13(4).
- Tversky A. Kahneman D. 1974). Judgment under Uncertainty: Heuristics and Biases. <https://www.math.mcgill.ca/vetta/CS764.dir/judgement.pdf> Date of access: 15 April 2020.
- United Nations Office on Drugs and Crime. 2020. Research brief: Effect of the COVID-19 pandemic and related restrictions on homicide and property crime. <https://www.unodc.org>. Date of access: 16 March 2020.
- United Nations. 2014. Overview of Demographic Concepts and methods: United Nations Statistics Division. <https://unstats.un.org/unsd/demographic/meetings/wshops/Myanmar/2014/docs/s05.pdf> Date of access: 23 June 2020.
- Van Campen, K. S., Serido, J., & Shim, S. 2010. A roadmap for young adults' financial well-being. https://mcclellandinstitute.arizona.edu/sites/mcclellandinstitute.arizona.edu/files/ResearchLink_APLUS_2.3_0.pdf Date of access: 23 June 2020.
- Van den Bergh, A. 2018. *Analysing risk tolerance during the investor lifecycle*. Vanderbijlpark: North-West University. (Thesis – Masters).

Van Deventer, M. 2013. Black generation Y students' knowledge of and attitudes towards personal financial management. Vanderbijlpark: NWU. (Thesis-PhD).

Van Niekerk, JP. 1997. The development of the principles of insurance law in the Netherlands from 1500 to 1800. <https://core.ac.uk/download/pdf/43175611.pdf> Date of access: 15 December 2020.

Van Praag, B.M.S. & Frijters, P. 2003). The Anatomy of Subjective Well-Being. *Journal of Economic Behavior and Organization*, 51(1): 29.

Van Schalkwyk, C.H. 2012. *Member choice in a defined benefit contribution pension plan: decision-making factors*. Johannesburg: University of Johannesburg. (Thesis – PhD).

Vijayan, T.S. 2016. Introduction to Insurance. <https://www.policyholder.gov.in/uploads/CEDocuments/Introduction%20to%20Insurance.pdf> Date of access: 14 January 2021.

Virdi, A. A. 2005. Risk Management among SMEs. <http://www.cpaireland.ie/docs/defaultsource/business-resource/icaew---risk-management-among-smes.pdf?sfvrsn=2>. Date of access: 23 October. 2020.

Vivian, R.W. 2007. South African insurance markets. *Journal of Governance and Regulation*, 2(1). https://www.researchgate.net/publication/226151803_South_African_Insurance_Markets Date of access: 18 November 2020.

Vroman, W. & Woodbury, S.A. 2014. Financing Unemployment Insurance. *National Tax Journal*, 67(1):253.

Wade, C. & Tavris, C. 1996. *Psychology*. 4th ed. New York: Harper Collins.

Wallace, R.B., Karim, M.R. & Murthy, D.N. 2011. Preliminary Data Analysis. https://www.researchgate.net/publication/302509467_Preliminary_Data_Analysis Date of access: 25 August 2021.

Wang, H. 1997. An empirical analysis of household portfolio allocation based on a rational expectation model. The Ohio State University: (Thesis-PhD).

Wang, P., & Wen, Y. 2012. Speculative Bubbles and Financial Crises. *American Economic Journal: Macroeconomics*, 4(3), 184-185.

Ward, D. & Zurbrugg, R. 2002. Law, Politics and Life Insurance Consumption in Asia. *The Geneva Papers on Risk and Insurance*, 27(3):395. <https://link.springer.com/content/pdf/10.1111%2F1468-0440.00181.pdf> Date of access: 12 June 2020.

Watkins, M.W. 2018. Exploratory Factor Analysis: A Guide to Best Practice. *Journal of black psychology*, 44(5).
https://www.researchgate.net/publication/324822608_Exploratory_Factor_Analysis_A_Guide_to_Best_Practice Date of access: 22 July 2021.

Weber, E. U. 2003. *Perception matters: Psychophysics for economists*. Oxford, UK: Oxford University Press.

Weber, E.U., Blais, A. & Betz, N.E. 2002. A Domain-Specific Risk-Attitude Scale: Measuring Risk Perceptions and Risk Behaviours. *Journal of Behavioural Decision Making*, 15(4).

Welman, K.C., Kruger, S.J. & Mitchell, B. 2005. *Research methodology*. 3rd ed. Cape Town: Oxford University Press of South Africa.

Wiid, J. & Diggins, C. 2013. *Marketing research*. 2nd ed. Cape Town: Juta.

Wilkinson, B. 2014. Political Risk in Emerging Markets: Turbo Capitalism Turns To Political Crisis. https://www.oliverwyman.com/content/dam/oliverwyman/global/en/2014/dec/RJ2014%2003_Political%20Risks_Ipad.pdf Date of access: 13 December 2020.

Willet A.H. 2002. *The Economic Theory of Risk and Insurance*. University Press of the Pacific, Honolulu.

Williams C.A. Jr. Heins R.M. 1989. *Risk Management and Insurance*. 6th ed. McGraw-Hill, New York.

Wilson, B.G. 1996. *Constructivist learning environments: case studies in instructional design*. Educational Technology Publications. New Jersey: Englewood Cliffs.

Wolff, K. Larsen, S. & Ogaard, T. 2019. How to define and measure risk perceptions. *Annals of Tourism Research*, 79. <https://doi.org/10.1016/j.annals.2019.102759> Date of access: 2 August 2020.

World Bank. 2020. Chapter 3: Lasting Scars of the COVID-19 Pandemic. <http://pubdocs.worldbank.org/en/112641588788257004/Global-Economic-Prospects-June-2020-Topical-Issue-1.pdf> Date of access: 10 October 2020.

World Bank. 2020. COVID-19 and the Insurance Industry: Why a Gender-Sensitive Response Matters. <https://www.ifc.org/wps/wcm/connect/eaebcd1f-5b9f-467e-b6cf-b4d616842375/202006-Women-Insurance-COVID19+B.pdf?MOD=AJPERES> Date of access: 22 December 2020.

World Health Organization (WHO). 2020. WHO Coronavirus Disease (COVID-19) Dashboard. https://covid19.who.int/?gclid=CjwKCAjw88v3BRBFEiwApwLevSdd9W7F5OK7tYIJNnderExdHZCYE9SPh0xMwPFC7Vk10M0dU2CIkBoC5awQAvD_BwE Date of access: 11 June 2020.

Yang, S. & Hinkle, J. 2012. Issues in Survey Design: Using Surveys of Victimization and Fear of Crime as Examples. https://www.researchgate.net/publication/278698965_Issues_in_Survey_Design_Using_Surveys_of_Victimization_and_Fear_of_Crime_as_Examples Date of access: 6 May 2021.

Yao, R., Sharpe, D.L. & Wang, F. 2011. Decomposing the age effect on risk tolerance. *The Journal of Socio-Economics*, 40(1):879-887.

Yong, J. 2020. Insurance regulatory measures in response to COVID-19. <https://www.bis.org/fsi/fsibriefs4.pdf> Date of access: 19 October 2020.

Yoo, M. 2014. Private Health Insurance and Risk Protection: Changes in Out-of-Pocket Medical Spending, 2001 and 2011. *The Geneva Papers on Risk and Insurance. Issues and Practice*, 39(4), 727. www.jstor.org/stable/24736686 Date of access: 9 May 2020.

Yorulmaz, O. 2016. Marine Insurance and Piracy.

https://www.researchgate.net/publication/311762118_Marine_Insurance_and_Piracy Date of access: 7 July 2020.

Zikmund, W.G. & Babin, B. 2013. Essentials of marketing research. 5th ed. China: South-Western Cengage Learning.

ANNEXURE A: QUESTIONNAIRE

Risk perceptions amongst insurance policyholders in Gauteng

Please do not put your name, surname, or any identifying marks on your questionnaire. You are being invited to take part in a research project that forms part of a Masters' study. The purpose of this study is to predict the influence of the risk perception of insurance policy holders located in Gauteng. This study will focus on how insurance policy holders in Gauteng perceive risk based on their insured possessions.

Please complete if you meet the following criteria:

- **Lives in Gauteng;**
- **Older than 18 years;**
- **Has an insurance policy; and**
- **Insured at any insurance company in South Africa.**

Also, your participation is entirely voluntary, and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. The data will be **confidential**, and your results will be reported in aggregate (as part of the whole sample) and not individually. The questionnaire should take, on average, 15 minutes to complete.

SECTION A: DEMOGRAPHICAL INFORMATION

A1.

Age	18 -24	1
	25 -34	2
	35 -49	3
	50 -59	4
	60-69	5
	70+	6

A2.

Gender	Male	1
	Female	2

A3.

Ethnicity	African	1
	Asian	2
	Coloured	3
	White	4
	Other	5

A4.

Marital status	Single	1
	Common law spouse	2
	Married	3
	Divorced	4
	Widowed	5

A5.

Highest level of education	No matric	1
	Matric	2
	Diploma	3
	Bachelor's degree	4
	Honours degree	5
	Master's degree	6
	Doctoral degree	7

Other: _____

A6.

Employment status	Student	1	Other: _____
	Salaried employed	2	
	Self employed	3	
	Unemployed-not looking for work	4	
	Unemployed- looking for work	5	
	Homemaker	6	
	Retired	7	

A7.

What is your annual income?	Below R 100 000	1
	R 100 001-200 000	2
	R 200 001-300 000	3
	R 300 001-400 000	4
	R 400 001-500 000	5
	R 500 001-600 000	6
	R 600 001-700 000	7
	R 700 001-800 000	8
	R 800 001-900 000	9
	R 900 001-R 1 million	10
	More than R 1 million	11

A8.

Income variability	My income is very stable & predictable	1
	My income is somewhat stable & predictable	2
	My income is fluctuating and unpredictable	3

A9.

Net worth	Less than R 1 million	1
	Between R1 million and R 3.5 million	2
	Between R3.5 million and R7 million	3
	Between R7 million and R12 million	4
	Between R12million and R30 million	5
	R30 million and more	6

A10.

Homeownership	Living with relatives	1
	Renting	2
	Homeownership with mortgage	3
	Homeownership without mortgage	4

A11.

Household size	1-2 individuals	1
	3-5 individuals	2
	6+ individuals	3

A12.

Number of dependants you care for	0 dependants	1
	1-2 dependants	2
	3-5 dependants	3
	6+ dependants	4

A13.

Religion	None	1
	Buddhism	2
	Christianity	3
	Judaism	4
	Hinduism	5
	Islam	6
	Other	7

A14.

Health status	Poor	1
	Fair	2
	Good	3
	Excellent	4

A15.

I have a _____ policy	Short-term insurance (car, home)	1
	Long-term insurance (life insurance)	2
	Both long-term and short-term insurance	3

Other: _____

A16.

Level of financial and insurance product knowledge	Little	1
	Average	2
	Above-average	3
	Superior	4

SECTION B (Financial well-being)

Circle or check the responses that are most appropriate for your situation.

Who is responsible for making financial decisions?	1	You on your own
	2	You with your partner
	3	Your partner
	4	Somebody else

1. What do you feel is the level of your financial stress today?	1	Overwhelming stress
	2	
	3	
	4	
	5	High stress
	6	
	7	Low stress
	8	
	9	
	10	No stress at all
2. How satisfied you are with your present financial situation? The "1" represents complete dissatisfaction. The "10" represents complete satisfaction. The more dissatisfied you are, the lower the number you should circle. The more satisfied you are, the higher the number you should circle.	1	Dissatisfied
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	Satisfied
3. How do you feel about your current financial situation?	1	Feel overwhelmed
	2	
	3	
	4	Sometimes feel worried
	5	
	6	
	7	Not worried
	8	
	9	
	10	Feel comfortable
4. How often do you worry about being able to meet normal monthly living expenses?	1	Worry all the time
	2	
	3	
	4	Sometimes worry
	5	

	6	
	7	Rarely worry
	8	
	9	
	10	Never worry
5. How confident are you that you could find the money to pay for a financial emergency that costs about R10 000?	1	No confidence
	2	
	3	
	4	Little confidence
	5	
	6	
	7	Some confidence
	8	
	9	
	10	High confidence
6. How often does this happen to you? You want to go out to eat, go to a movie or do something else and don't go because you can't afford to?	1	All the time
	2	
	3	
	4	Sometimes
	5	
	6	
	7	Rarely
	8	
	9	
	10	Never
7. How frequently do you find yourself just getting by financially and living paycheck to paycheck?	1	All the time
	2	
	3	
	4	Sometimes
	5	
	6	
	7	Rarely
	8	
	9	
	10	Never
8. How stressed do you feel about your personal finances in general?	1	Overwhelming stress
	2	
	3	
	4	High stress
	5	
	6	
	7	Low stress
	8	
	9	
	10	No stress at all

SECTION C: BEHAVIOURAL FINANCE BIASES

Indicate to what extent the following statements drive your financial decisions:

Behavioural biases		Strongly disagree	Disagree	Somewhat at disagree	Somewhat at agree	Agree	Strongly agree
C1	I base my financial decision on the past performance of the insurance company	1	2	3	4	5	6
C2	I regret insuring when I try to claim but get complications	1	2	3	4	5	6
C3	I insure with a company only when I hear positive word-of-mouth	1	2	3	4	5	6
C4	My superior financial knowledge drives my decisions	1	2	3	4	5	6
C5	I insure at a company based on my instincts	1	2	3	4	5	6
C6	My financial decisions are based on future market predictions	1	2	3	4	5	6
C7	I trust my own analysis over my premiums and benefits from the insurance company	1	2	3	4	5	6
C8	I would rather forfeit a lower premium for more cover	1	2	3	4	5	6
C9	I exercise self-control when making financial decisions	1	2	3	4	5	6

SECTION D: RISK IDENTIFICATION

For each of the following statements, please indicate the extent to which you agree with the following statements

Risk perception		Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
D1	A risk is an event that results in a pure financial loss.	1	2	3	4	5	6
D2	A risk is an event that can result in an emotional loss	1	2	3	4	5	6
D3	Risk is the feeling of not knowing what is going to happen	1	2	3	4	5	6
Risk perception		Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
D4	I feel that my consciousness of risk has increased over the years	1	2	3	4	5	6
D5	I feel more exposed to risk than ever before	1	2	3	4	5	6

SECTION D: RISK IDENTIFICATION

For each of the following statements, please indicate the extent to which you agree with the following statements

Risk perception		Strongly disagree	Disagree	Some-what disagree	Some-what agree	Agree	Strongly agree
D6	I would rather forfeit a low premium for higher insurance coverage	1	2	3	4	5	6
D7	I feel that I am surrounded by risk in everyday life	1	2	3	4	5	6
D8	I would feel more exposed to risk by not having any type of insurance	1	2	3	4	5	6
D9	I feel a sense of comfort and security knowing I have insurance	1	2	3	4	5	6
D10	I feel uneasy by taking out low insurance cover	1	2	3	4	5	6

SECTION E: RISK PERCEPTION SCALE (DOSPERT SCALE)

Indicate the likelihood of engaging in each activity or behaviour:

Risk taking		Very unlikely	More unlikely	Unlikely	Likely	More likely	Very unlikely
E1	Taking some questionable deductions on your income tax return	1	2	3	4	5	6
E2	Downloading proprietary software from the internet	1	2	3	4	5	6
E3	Not returning a wallet you found that contains R500	1	2	3	4	5	6
E4	Investing 10% of your annual income in a moderate growth mutual fund	1	2	3	4	5	6
E5	Betting a day's income on the horse races	1	2	3	4	5	6
E6	Spending all your money on an unauthorised business venture	1	2	3	4	5	6
E7	Gambling a week's income at a casino	1	2	3	4	5	6
E8	Driving a car without a seat belt	1	2	3	4	5	6
E90	Swimming far out from shore on an unguarded lake or ocean.	1	2	3	4	5	6
E10	Riding a motorcycle without a helmet	1	2	3	4	5	6
E11	Sunbathing without sunscreen	1	2	3	4	5	6
E12	Speaking up your mind about an unpopular issue in a meeting at work	1	2	3	4	5	6
E13	Moving to a city far away from your extended family	1	2	3	4	5	6
E14	Disagreeing with an authority figure on a major issue	1	2	3	4	5	6
E15	Choosing a career that you truly enjoy over a more prestigious one	1	2	3	4	5	6

E1 6	Going camping in the wilderness	1	2	3	4	5	6
E1 7	Going down a ski run that is beyond your ability	1	2	3	4	5	6
E1 8	Taking a weekend sky diving class	1	2	3	4	5	6
E1 9	Bungee-jumping off a tall bridge	1	2	3	4	5	6
E2 0	I feel more at risk of losing my possessions now than I did 10 years ago	1	2	3	4	5	6
E2 1	10 years ago I felt safer without insuring my possessions	1	2	3	4	5	6
E2 2	10 years ago I paid a lower premium on my insurance due to lower risk	1	2	3	4	5	6

RISK TOLERANCE SCALE

E23. Which of the following statements comes closest to the amount of financial risk that you and your spouse are willing to take?	1	Take substantial financial risks, as I only have insurance on one of my assets
	2	Take above average financial risk, as most of my assets are not covered
	3	Take average financial risks as most of my assets are covered but not comprehensively
	4	Not willing to take any financial risks, I have comprehensive insurance cover

SECTION F: EXTERNAL OR INTERNATIONAL EVENTS

POLITICAL-LEGAL

Political stability and a sound legal system in a country are imperative for a stable economy.

For each of the following statements, please indicate the likelihood that international and domestic political risk, unless specified otherwise, would influence your insurance decisions if you were to find yourself in certain political circumstances.

		Very unlik ely	Unlik ely	Some -what unlik ely	Some -what likely	Lik ely	Ver y like ly
F1	I take political circumstances into consideration when making insurance decisions.	1	2	3	4	5	6
F2	The current political uncertainty in South Africa negatively influences my confidence and causes me to insure more possessions the South African	1	2	3	4	5	6
F3	I believe that the current political circumstances in South Africa are negatively influencing insurance performance.	1	2	3	4	5	6

REACTION TO MARKET FLUCTUATIONS, VOLATILITY AND INTERNATIONAL EVENTS							
<i>Market fluctuations and volatility is an omnipresent risk.</i>							
<i>For each of the following statements, please indicate the likelihood that market fluctuations and volatility would influence your insurance policy decisions.</i>							
		Very unlikely	Unlikely	Some-what unlikely	Some-what likely	Likely	Very likely
F4	I take market fluctuations and volatility into consideration when making investment decisions.	1	2	3	4	5	6
F5	Periods of high fluctuations and volatility in the markets, make me take more calculated risks concerning my insurance policy.	1	2	3	4	5	6
F6	I will remain with my initial long-term insurance policy, regardless of high market fluctuations and volatility.	1	2	3	4	5	6
F7	Periods of high market fluctuations and volatility cause me to doubt my current insurance coverage	1	2	3	4	5	6
F8	During a global pandemic I will take out insurance	1	2	3	4	5	6
F9	During a global pandemic I will increase my insurance coverage	1	2	3	4	5	6

CRIME							
<i>It is reported that individuals' insurance policy decisions are influenced by recent news about crime.</i>							
<i>For each of the following statements, please indicate the likelihood that news about crime would/were to influence your insurance policy decisions.</i>							
		Very unlikely	Unlikely	Some-what unlikely	Some-what likely	Likely	Very likely
F10	I do keep myself informed regarding news about crime that may affect my level of insurance coverage.	1	2	3	4	5	6
F11	I do take news regarding local criminal events into consideration when making insurance decisions.	1	2	3	4	5	6
F12	Negative crime statistics negatively influence my level of insurance coverage.	1	2	3	4	5	6
F13	As a result of previous crimes in Gauteng, I take more calculated risks when making insurance decisions.	1	2	3	4	5	6

UNEMPLOYMENT

It is reported that individuals' insurance policy decisions are influenced by recent news about unemployment.

For each of the following statements, please indicate the likelihood that news about unemployment would/were to influence your insurance policy decisions.

		Very unlikely	Unlikely	Some-what unlikely	Some-what likely	Likely	Very likely
F1 4	I do keep myself informed regarding news about unemployment that may affect my insurance policy coverage.	1	2	3	4	5	6
F1 5	High unemployment levels influence my insurance decisions.	1	2	3	4	5	6
F1 6	As a result of previous unemployment rates in Gauteng, I take more calculated risks when making insurance decisions.	1	2	3	4	5	6

THANK YOU!

ANNEXURE B: CODE BOOK

Section A			
Question	Code	Construct measured	Value
Question 1	A1	Age	18 -24 (1), 25 -34 (2), 35 -49 (3), 50 -59 (4), 60-69 (5), 70+ (6)
Question 2	A2	Gender	Male (1), Female (2)
Question 3	A3	Ethnicity	African (1), Asian (2), Coloured (3), White (4), Other (5)
Question 4	A4	Marital status	Single (1), Common law spouse (2), Married (3), Divorced (4), Widowed (5)
Question 5	A5	Highest level of education	No matric (1), Matric (2), Diploma (3), Bachelor's degree (4), Honours degree (5), Master's degree (6), Doctoral degree (7), Other (8)
Question 6	A6	Employment status	Student (1), Salaried employed (2), Self-employed (3), Unemployed – not looking for work (4), Unemployed – looking for work (5), Homemaker (6), Retired (7), Other (8)
Question 7	A7	Annual income?	Below R100 000 (1), R100 001–R200 000 (2), R200 001–R300 000 (3), R300 001–R 400 000 (4), R400 001–R500 000 (5), R500 001–R600 000 (6), R600 001–R700 000 (7), R700 001–R800 000 (8), R800 001–R900 000 (9), R900 001–R 1 million (10), More than R1 million 0 (11)
Question 8	A8	Income variability	My income is very stable and predictable (1), My income is somewhat stable and predictable (2), My income is fluctuating and unpredictable (3)
Question 9	A9	Net worth	Less than R1 million (1), Between R1 million and R3.5 million (2), Between R3.5 million and R7 million (3),

			Between R7 million and R12 million (4), Between R12million and R30 million (5), R30 million and more (6)
Question 10	A10	Homeownership	Living with relatives (1), Renting (2), Homeownership with a mortgage (3), Homeownership without a mortgage (4)
Question 11	A11	Household size	1–2 individuals (1), 3–5 individuals (2), 6+ individuals (3)
Question 12	A12	Number of dependants	0 dependants (1), 1–2 dependants (2), 3–5 dependants (3), 6+ dependants (4)
Question 13	A13	Religion	None (1), Buddhism (2), Christianity (3), Judaism (4), Hinduism (5), Islam (6), Other (7)
Question 14	A14	Health status	Poor (1), Fair (2), Good (3), Excellent (4)
Question 15	A15	Type of policy	Short-term insurance (car, home) (1), Long-term insurance (life insurance) (2), Both long-term and short-term insurance (3), Other (4)
Question 16	A16	Level of financial and insurance product knowledge	Little (1), Average (2), Above-average (3), Superior (4)
Section B			
Question	Code	Construct measured	Value
Question 1	B1	Financial well-being	You on your own (1), You with your partner (2), Your partner (3), Somebody else (4)
Question 2	B2		Overwhelming stress (1) High stress (5), Low stress (7), No stress at all (10)
Question 3	B3		Dissatisfied (1), Satisfied (10)
Question 4	B4		Feel overwhelmed (1), Sometimes feel worried (4), Not worried (7) Feel comfortable (10)
Question 5	B5		Worry all the time (1), Sometimes worry (4), Rarely worry (7), Never worry (10)
Question 6	B6		No confidence (1), Little confidence (4), Some

			confidence (7), High confidence (10)
Question 7	B7		All the time (1), Sometimes (4), Rarely (7), Never (10)
Question 8	B8		All the time (1), Sometimes (4), Rarely (7), Never (10)
Question 9	B9		Overwhelming stress (1), High stress (4), Low stress (7), No stress at all (10)
Section C			
Item	Code	Construct measured	Value
Item 1	C1	Behavioural finance	Strongly disagree (1), Disagree (2), Somewhat disagree (3), Somewhat agree (4), Agree (5), Strongly agree (6)
Item 2	C2		
Item 3	C3		
Item 4	C4		
Item 5	C5		
Item 6	C6		
Item 7	C7		
Item 8	C8		
Item 9	C9		
Section D			
Item	Code	Construct measured	Value
Item 1	D1	Risk identification	Strongly disagree (1), Disagree (2), Somewhat disagree (3), Somewhat agree (4), Agree (5), Strongly agree (6)
Item 2	D2		
Item 3	D3		
Item 4	D4		
Item 5	D5		
Item 6	D6		
Item 7	D7		
Item 8	D8		
Item 9	D9		
Item 10	D10		
Section E			
Item	Code	Construct measured	Value
Item 1	E1	Risk perception scale (DOSPERT)	Very unlikely (1), Unlikely (2), Somewhat unlikely (3), Somewhat likely (4), Likely (5), Very likely (6)
Item 2	E2		
Item 3	E3		
Item 4	E4		
Item 5	E5		
Item 6	E6		
Item 7	E7		
Item 8	E8		
Item 9	E9		
Item 10	E10		
Item 11	E11		
Item 12	E12		
Item 13	E13		
Item 14	E14		

Item 15	E15		
Item 16	E16		
Item 17	E17		
Item 18	E18		
Item 19	E19		
Item 20	E20		
Item 21	E21		
Item 22	E22		
Question 1	E23	Risk tolerance	Take substantial financial risks, as I only have insurance on one of my assets (1), Take above average financial risk, as most of my assets are not covered (2), Take average financial risks as most of my assets are covered but not comprehensively (3)
Section F			
Item	Code	Construct measured	Value
Item 1	F1	Political-legal	Very unlikely (1), Unlikely (2), Somewhat unlikely (3), Somewhat likely (4), Likely (5), Very likely (6)
Item 2	F2		
Item 3	F3		
Item 4	F4	Reaction to market fluctuations, volatility and international events	Very unlikely (1), Unlikely (2), Somewhat unlikely (3), Somewhat likely (4), Likely (5), Very likely (6)
Item 5	F5		
Item 6	F6		
Item 7	F7		
Item 8	F8		
Item 9	F9		
Item 10	F10	Crime	Very unlikely (1), Unlikely (2), Somewhat unlikely (3), Somewhat likely (4), Likely (5), Very likely (6)
Item 11	F11		
Item 12	F12		
Item 13	F13		
Item 14	F14	Unemployment	Very unlikely (1), Unlikely (2), Somewhat unlikely (3), Somewhat likely (4), Likely (5), Very likely (6)
Item 15	F15		
Item 16	F16		

ANNEXURE C: ETHICAL CLEARANCE



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Economic and Management Sciences Research
Ethics Committee (EMS-REC)

31 August 2020

Dr Sune Ferreira and Dr Zandri Dickason
Per e-mail
Dear Drs Ferreira and Dickason,

EMS-REC FEEDBACK: 28082020

Student: Makalani, Y (27244792)(NWU-00720-20-A4)

Applicant: Dr SJ Ferreira / Dr Z Dickason – MCom in Risk Management

Your ethics application on, *An analysis of the factors influencing the risk perception amongst insurance policyholders in Gauteng*, which served on the EMS-REC meeting of 28 August 2020, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-00720-20-A4** is given for one year of ethics clearance.

Due to the Covid-19 lock down ethics clearance for applications that involve data collection or any form of contact with participants are subject to the restrictions imposed by the South African government.

Kind regards,

**Mark
Rathbone**

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-
West University, ou=Business
management,
email=mark.rathbone@nwu.ac.za,
c=ZA
Date: 2020.09.08 13:33:48 +02'00'

Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)

Faculty of Economic and Management Sciences**DECLARATION WITH REGARDS TO SIMILARITY REPORT**

Turnitin (TII) is the plagiarism- prevention service of choice for the North-West University. A thesis/dissertation/mini-dissertation/article is submitted to the TII website, to be checked for similarities in the document by comparing submitted papers to several databases/repositories on the World Wide Web. It is important to note that TII does NOT identify plagiarism – only similarities. The aim is to draw students’ attention to these similarities so that they improve their academic writing style and reporting of sources before submission for examination. The undersigned declares that the dissertation with the title mentioned below, was submitted, assessed and that the issues (if any) have been addressed, and that a satisfactory report has been obtained. .

An analysis of the factors influencing the risk perception amongst insurance policyholders in Gauteng



Y Makalani

Student (Initials and surname)

27244792 Master of Commerce in Risk Management



Dr S Ferreira & Prof Z Dickason-Koekemoer

Supervisor (Initials and surname)

Declaration with regards to similarity report

File reference: 7.1.11.3.5