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Determinants of uptake of insurance underwriting on Public Service Vehicles plying for hire in Kenya

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DETERMINANTS OF UPTAKE OF INSURANCE UNDERWRITING ON PUBLIC SERVICE VEHICLES PLYING FOR HIRE IN KENYA.

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DECLARATION

I declare that this research work has not been submitted to any other institution for any academic award and it is solely my own original work.

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Approval

This research dissertation has been reviewed and approved by me as the university appointed supervisor

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ABSTRACT

Insurance sector contributes to the growth of the economy in addition to providing risk distribution avenue to asset owners. Whereas it is mandatory in Kenya, for all public service vehicles to have an insurance policy, at least third-party cover, many insurance firms in Kenya have shied away from providing insurance cover to public service vehicles plying for hire (commonly referred to as matatus). This has left only three insurance firms representing (6%) of all insurance firms registered in underwriting insurance for this growing class of motor vehicles. This study sought to identify the determinants of the uptake of insurance underwriting of public service vehicles plying for hire in Kenya. The specific research objectives were, to establish the extent to which the government regulations and reforms affect the uptake of insurance underwriting on public service vehicles plying for hire, to determine the influence of insurance industry practice on uptake of insurance underwriting on public service vehicles plying for hire and lastly, to establish the influence of shareholders' interests on uptake of insurance underwriting on public service vehicles plying for hire in Kenya. The study adopted a cross sectional research design with a target population of thirty-eight insurance firms underwriting general insurance in Kenya. Primary data was collected by use of questionnaire having structured and open-ended questions addressed to business development managers or their equivalents in each of the insurance firms. Data was analysed using both descriptive and inferential statistics by use of R software and results presented in form of bar charts and frequency tables. The study findings reveal that the main insurance industry factors that affect uptake of matatu underwriting are usage of the vehicle, vehicle sitting capacity, type of cover and level of fraud in the industry. With regard to government regulations and reforms, stringent traffic rules and mandatory third party are the most frivolous factors that are considered when offering insurance to matatus. Relating to shareholders' interests, the mandatory third-party cover and the risk-taking nature of the shareholders are the most critical considerations when insuring matatus. Lastly, in order to increase the number of insurers that underwrite matatus, the study recommends implementation of a centralized motor insurance data system, tighter anti-fraud systems, and strong internal controls in the insurance firms by the insurance regulator with the aid of the government. Areas of further study include comparative studies in other countries which have similar transport system as in Kenya.

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ABBREVIATIONS & ACRONYMS

AKI	Association of Kenya Insurers
APAC	Asian Pacific American Community
Bn	Billion
CEO	Chief Executive Officer
EMEA	Europe Middle East and Africa
IFIU	Insurance Fraud Investigation Unit
IRA	Insurance Regulatory Authority
KBS	Kenya Bus Services
KES	Kenya shillings
KMIP	Kenya Motor Insurance Pool
KNBS	Kenya National Bureau of Statistics
Mn	Million
NTSA	National Transport and Safety Authority
OTC	Overseas Trading Company
PCA	Principal Component Analysis
PSV	Public Service Vehicles
SACCO	Savings and Credit Cooperative Organization
UTC	United Transport Overseas

DEFINITION OF TERMS

Agent	A person or a group of people selling insurance on behalf of an insurance company.
Claim	A request for payment when the insured event occurs as per the terms of the insurance policy.
First/ Second / Third Party	The first party is the insured, the second is insurance company and the third party is any other person(s) who may be affected by the insured actions.
Insurance	A contract in which an insurance company promises to compensate an insured.
Insured	The person who has taken insurance and pays premium
Insurer	The company that accepts risks after receiving premiums and pays claims.
Loss history	The number of insurance claims previously made by an insured. An insurance company will consider loss history when underwriting a new policy or considering renewal of an existing policy
Policy	A formal contract /document issued by an insurance company to the insured setting out terms on which the insurance cover has been provided
Public service vehicles plying for Hire (*matatu*.)	These are private vehicles ranging from minibuses, pick- ups, trucks and estate cars that ply set routes with a driver and a conductor
Risk/Peril	An occurrence that can cause loss to an individual or a business for example fire, theft, death, accidents and others. A named-peril/risk policy covers the insured only for the risks identified in the policy. An all risk policy covers all causes of loss except those specifically excluded.

Underwriting	The process an insurance company uses to decide whether to accept or reject an application for an insurance cover.
Uptake of PSV (*matatu*) insurance	This is the insurance firms' decision to accept or reject an application for insurance. In this study it is the decision to underwrite or not to underwrite PSV (*matatu*) insurance.

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DEDICATION

I dedicate this thesis to my wife, Beatrice and our children who stood with me during the entire academic journey. Were it not for your daily encouragement, I would not have finished the academic race. Special gratitude goes to my parents Mr and Mrs Henry Mungai Thong'ote, for have given me the foundation in education, may God bless you abundantly. To my brothers and sisters and the entire MBA 2016 classmates, I salute you for being there to cheer up to the finishing line.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally the Insurance industry has been highly vulnerable to the market dynamics partly due to intangibility of its products coupled with changes in technology, human behaviour and the environment. While life insurance is highly affected by demographic characteristics and changes in technology, general insurance (non-life) has been affected by regulations, competition in the market among other factors (Kibet, 2016). Non-life insurance sub sector consisting of motor vehicle, fire and other property damage and accident can experience different rates of growth and could offset one another in terms of the overall level of premium growth in the non-life insurance sector.

Motor insurance is exceedingly important in developing countries. Not only does it occupy a dominant position in terms of total premium income, but is also a major source of insurance cash flows. It provides a steady income with no specific periods or seasons thus insurers can meet their normal obligations and finance expansion in new fields of activity. Mwangome (2012) notes that unlike other classes of insurers, motor vehicle insurance does not require proportional re-insurance except in cases of very high liability limits. Thus major portion of the premium generated by this class remains with the direct insurer, becoming a major source of investment earning.

The number of motor vehicles in developing countries has been increasing yearly. Lotuiya, (2014) observes that in 1970, the total motor fleet in developing countries was 7.9 % of total world fleet, which increased to 11.9% in 1980 representing a real growth in the rate of motorization rather than vehicle replacement. The increase in motorization in developing countries has accelerated development by facilitating transport of people and merchandise.

Motor insurance performance in most developing countries has not been favourable. This is in spite of the fact that motor insurance industry is compulsory for third party liability. Additionally, un-like other insurance products, motor insurance underwriting expenses should be low, since this activity does not require highly specialised underwriting knowledge. Furthermore, acquisition costs should be low compared with other forms of insurance products that may call for aggressive selling campaigns.

Similar to other developing countries, growth in the motor industry and more specifically in the Public Service Vehicle (PSV) sector in Kenya has been tremendous in both revenue and in the numbers of vehicles in the last two decades. The number of PSV vehicles is recorded to have increased by 61% from 33, 349 in 2016 to 53, 692 in 2017. The number of PSVs plying for hire (matatus) with a maximum capacity of 14 seats constituted 69.62% of the operating PSVs as at 2017 (KNBS, 2019). All of these vehicles are by Kenya law required to procure motor vehicle insurance cover as is required for both private and commercial vehicles. Huge monetary penalties and even disqualifications of drivers from driving are some of the recommended penalties for lack of motor insurance.

This shows that there exists a large and growing market for PSV insurance. Paradoxically, there are only three insurance companies that offer insurance underwriting services to this market. This study sought to investigate the reasons behind this phenomenon by studying the government regulations, industry practices and shareholders' interests that affect the supply of PSV (matatu) insurance in Kenya.

1.1.1 Insurance Underwriting

Several authors have put forth several definitions for various insurance terms. Odemba (2013) for instance, defines insurance as the process through which an insurer undertakes to incur the financial risks of another party known as the insured in consideration of premiums paid. The insurer refers the party that agrees to pay money in the happening of the contingency. Insurers are usually the insurance companies while the insured the person who faces a particular risk. The insured seeks protection against risk by paying a premium and claims money as compensation in the event of loss. However, in this study we borrow from the definition of Macedo (2009) who refers to insurance underwriting as the process of selecting and accepting risks that behave similarly or assessing the necessary acceptance conditions to those risks that differ to maintain the homogeneity of the portfolio.

Underwriting is an important element of the risk selection and valuation process in each insurance company. The underwriting process represents the starting point of a legal and financial relationship between an insurer and a particular proposer and is normally based on defining the criteria indicating the risk appetite on the part of the insurer while at the same time having real impact on the technical result (Conrad & Mostert, 2009).

It is pivotal therefore, for the underwriter to be able to select and accept risks that behave similarly or assess the necessary acceptance conditions for those risks that differ to maintain

the homogeneity of the portfolio. In motor insurance for example, the premium varies according to the risk characteristics of the driver and the car.

A report by Binder and Mußhoff (2017) on the state of insurance worldwide reveals that the global insurance market in general is on a growth trajectory. They find that the Americas' contribution to the total insurance market in the period from 2010-2016 appeared rather stable. The Asian Pacific American Community (APAC) region on the other hand was losing ground to Europe Middle East and Africa (EMEA), with its share of total global premiums slipping from 34 percent in 2010 to 28 percent in 2016. They note that there has been a shift in momentum from mature markets toward the emerging markets. For instance, total insurance premiums in Western Europe declined by 1 percent from 2015 to 2016, whereas the rest of EMEA region grew at 7 percent during this period.

In Kenya specifically, Insurance Regulatory Authority (IRA) (2018) reports that the insurance industry has proven resilient. Despite the prolonged electioneering period experienced in 2017 for example, the industry recorded a growth in insurance premium of 6.3% from KES 196.64 billion in 2016 to KES 209.0 billion in 2017. The industry net profit grew by a similar margin to KES 13.64 billion in 2017 from KES 12.83 billion in 2016. This growth in revenue reflects ability of insurance industry to thrive even in the face of adversity which contrary to our expectations, the PSV (matatu) insurance underwriting has not been fully embraced. If the insurance industry is indeed doing as well as it is reported to be, we raise the question, why is the PSV insurance sector not depicting a similar trend?

1.1.2 Factors Determining Uptake of Insurance Underwriting

Various factors affect Insurance companies' decision to underwrite PSVs which study categorises into three main categories namely, Government regulations and reforms, insurance industry practice and shareholder interests.

Government regulations play a crucial role in influencing uptake of insurance underwriting. In Kenya, motor vehicle insurance is governed by the Motor Vehicle (Third Party Risk) Act, Cap 405, which provides for compulsory insurance for all PSVs, whose main objective is to protect third party. However, all the PSVs that are financed by banks and other asset financing firms are required to have a comprehensive insurance cover to cover even the asset. These requirements creates a large market for insurance underwriting which should serve to draw more players into the PSV insurance market.

The mandatory third party cover regulation however places strain on the insurance companies as underwriting PSV risks becomes unsustainable due to increase in number of claims received, the results being the heavy underwriting losses. Attempts by insurance companies to mitigate the costs arising out of insurance claims have incidentally served to escalate their own costs.

The practices observed in the PSV transport have often fail to work in favour of increased insurance underwriting in this sector. Graeff (2010) argues that the reputation of this industry where drivers are associated with poor driving behaviour in a bid to increase their daily income dependent on the amount they are able to collect per day, may be a deterrent to PSV insurance underwriting. The author notes that efforts such as enforcing stringent road traffic rules are often futile due to the presence of corrupt police and traffic officers on the roads. The transport sector has seen poor implementation of plans. Rules such as the infamous 'Michuki rules' are implemented temporarily and in waves and that failure to have proper and permanent plan to bring order to the PSV transport sector has deterred PSV insurance underwriting.

The interest and characteristics of shareholders of Insurance companies as well affect their propensity to underwrite PSVs. As discussed, this is a very high-risk sector and therefore the risk appetite of Insurance companies' shareholders' plays a key role in their choice to participate in this sector. While high risks are associated with high returns , shareholders of insurance firms are still perceived to have shied away from this product. It is worthy to note that, the keenness of shareholder's on profit maximisation and their risk diversification criteria may affect their willingness to underwrite PSVs.

1.1.3 Public Service Vehicles Sector in Kenya

Formal public road transport in Kenya started in 1934 with fleet of 13 buses on 12 routes in Nairobi operated by London based OTC. Infiltration by informal transport providers in 1990s led to an upsurge of 17,600 of public service vehicles commonly referred to as "matatus" operating in the industry (Lotuiya, 2014) and by the year 2003, this number stood at 40,000. As at 2016, the number of matatus operating on Kenya's roads was estimated to be over 100,000 (NTSA, 2016)

Growth in the motor industry and more specifically in the PSV sector has been tremendous in both revenue and in the numbers of vehicles in the last two decades. In the four years between 2008 and 2012, for instance, the number increased by approximately 51% from 61,886 to 93,343 (KNBS 2013). As at 2017, the number of matatus was 69.62% constituting the largest

proportion of the licenced PSVs. Despite this growth, the PSV insurance industry has failed to keep pace and enjoy the full benefits of this expansion.

As at 2018, only three out of the 38 insurance companies in Kenya were underwriting PSV insurance for matatus, these being: Direct line Insurance Company Ltd, Xplico insurance company and Invesco Assurance Company Ltd. A report by Insurance Industry expert Alexander Forbes presented to the Matatu Owners Association national governing council on 16th September 2016, revealed that PSV insurance companies were undercharging to the extent that for every shilling received, the cost to manage it, was shilling one and forty cents.

Macharia (1998) attributes the collapse of the PSV insurance industry in Kenya to the fault system adopted by the insurance industry where the insurer was bound to indemnify the insured irrespective of the contribution of the insured to the loss occasioning the claims. Moreover, when the insured incurs the loss, the process of claiming is procedural with involvement of several parties. Additionally, insurance companies in this sector receive a large number of fraudulent claims. According to IRA (2015), the Insurance Fraud Investigation Unit (IFIU) received 29 insurance fraud cases involving a total amount to KES 26.1 Million out of which KES 13.05 Million and KES 10.52 Million were fraudulent motor insurance claims and theft by insurance companies' employees respectively.

Finally, PSV are very risky to cover as the industry's vast growth has been accompanied by increasing road traffic accidents that have threatened safety of Kenyan travellers. The number of fatalities was reported to have increased from 1,800 in 1990 to 2357 in 2015 (NTSA, 2016). The causes of the accidents and deaths can be linked to reckless driving, non-roadworthy vehicles, overloading and poor conditions of the road (Wekesa, 2010).

1.2 Statement of the Problem

Growth in the motor industry and more specifically in the PSV sector has been tremendous in both revenue and in the numbers of vehicles in the last two decades. The PSV insurance industry covering public services vehicles plying for hire has however failed to equally grow to enjoy the full benefits of this expansion especially given that all PSV operators are required to have at least a third-party risk cover. In fact, the sector is a graveyard of companies that have gone under with billions of policyholders' funds.

The question that begs to be answered is why only three insurance companies (6%) out of the possible thirty eight companies are underwriting the PSV plying for hire business in Kenya.

With a profit motive behind their establishment, it would be expected that PSV underwriting would definitely contribute to the firms' profits. Some insurance companies namely, Amarco Insurance Company Ltd and Gateway Insurance Company Ltd had tried but later ceased underwriting PSV insurance business at the beginning of 2016 (IRA, 2016). Several other PSV insurance companies that were covering PSV plying for hire have either been liquidated or placed under statutory management by Insurance Regulatory Authority (IRA). These include Kenya National Assurance, Access, Stallion, Lakestar, United, Invesco, Standard, BlueShield among others. However, Invesco was later revived after Matatu Owners Association acquired it. At this rate, the future of PSV transport would be at risk if the three remaining companies; i.e. Invesco Assurance Company Ltd, Xplico Insurance Company Ltd and Directline Insurance Company Ltd would collapse or cease providing PSV insurance business.

A number of studies have looked at the PSV insurance sector in Kenya. Omondi (1988) conducted a study on the operations of the Kenya Motor Insurance Pool (KMIP). This study sought to document the operations of the KMIP and determine the attitudes of executives of the pool member companies towards it. Makembo (1992) study on the compensation system (fault system) for personal injuries and deaths in motor insurance in Kenya, aimed at establishing the problems and identify possible solutions. Jaleha (1993) and Ramadhan (2009) studies on motor vehicle thefts and impact of reforms in the PSV insurance sector respectively, concluded that implementation of the legal notice, there was a lesser emphasis on driver related issues and a greater emphasis on mechanisms that would be used to minimize risk especially that of fraudulent claims carried. Wekesa (2010) study on the challenges facing public service vehicles in Kenya, found that moral hazard in the insurance industry was the biggest deterrent to PSV (matatu) insurance underwriting.

While other studies have examined factors affecting uptake of insurance , our study examines the various factors affecting PSV insurance uptake holistically by covering all key players namely the government, industry players and shareholders in order to determine the best approach to be taken to revive this otherwise doomed sector.

1.3 General Research Objective

To identify the factors that influence the uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

1.3.1 Specific Research Objectives

i) To establish the extent to which the government regulations and reforms affect the uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

ii) To determine the influence of insurance industry practice on uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

iii) To establish the influence of shareholders' interests on the uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

1.4 Research Questions

i) To what extent do the government regulations and reforms affect the uptake of insurance underwriting on PSV plying for hire in Kenya?

ii) How does the insurance industry practice influence the uptake of insurance underwriting on PSV plying for hire in Kenya?

iii) How do the shareholders' interests influence the uptake of insurance underwriting on PSV plying for hire in Kenya?

1.5 Significance of the Study

The findings of this study are expected to benefit several parties. One such party is the Kenya government and specifically the Insurance Regulatory Authority (IRA). The government may use these findings to formulate new or adjust the existing policies as well as coming up with appropriate regulations that will endear insurance firms to undertake PSV underwriting. Two, insurance companies that offer PSV underwriting and even those that have shied away from this business may use this study findings to come up with better strategies of dealing with the risks in the PSV insurance sector. Through AKI, they are better placed to negotiate with the government.

The results of this study are also expected to be beneficial to the matatu crews, owners and passengers as stakeholders in this industry. The interests of the matatu owners , matatu crew, passengers, and insurance shareholders which are so intertwined can be achieved through

uptake of PSV insurance. PSV insurance assures matatu owners and passengers mitigation of their risk exposure while shareholders are likely to earn higher revenue if matatu crew observe traffic regulations in the course of their operations. The entry of many insurance firms in the industry is also expected to stabilise the price of premiums. It will as well ensure that third parties such as passengers are adequately covered and certain to get compensation in the event of accidents.

Finally, this paper builds to the literature in the sector allowing other academicians and scholars to widen their knowledge in the field of PSV underwriting. The information provided could act as a reference point for further research in the insurance industry.

1.6 Scope of the Study

This study was carried on licensed insurance firms offering motor insurance, registered and operating in Kenya. The limit of the study was on the regulations that have been issued by the government in the last twenty years, the risk factors, pricing of premiums, claims and general challenges facing the PSV insurance sector. Positivism philosophy and cross sectional research design were applied in this study due to the nature of the study objectives. Primary data was collected using a well-structured questionnaire from a purposive sample size of 38 insurance firms that had licence to cover general risks as at 2018. The respondents were the business development managers, or their equivalents based at the companies' head offices in Nairobi.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review, which encompasses both the theoretical and empirical review. The theoretical review explores to agency theory, information asymmetry theory, fraud theories and regulatory theories while relating them to PSV insurance uptake. An empirical review on insurance sector with a bias on PSVs insurance is also explored in detail, terminating with a presentation of the conceptual framework.

2.2 Theoretical Review

The field of insurance is known to have considerable legal consequences after a loss occurs. Insurance laws and contractual provisions govern the amount of cover and inherent compensation. As is the case with all markets, information asymmetry exists in insurance underwriting where there is disequilibrium in the information between the insurer and the insured, resulting in adverse selection and moral hazard issues. It is on the basis of information asymmetry, that basic principles of insurance that regulate the motor industry were formulated.

2.2.1 Fundamental Principles of Insurance

In a bid to avoid surprise claims, a set of fundamental legal principles guide the insurance industry (Rejda & McNamara, 2017) which are; insurable interest, utmost good faith, proximate cause, contribution, subrogation and indemnity. First, the insurer of a PSV must have a financial or pecuniary interest in the vehicle that is insured. They must be able to suffer financial loss if the insured incident takes place. In motor insurance, this financial interest rises from two areas: firstly, the policyholder's monetary interest in the insured and secondly, the loss ascending from the damage.

Utmost good faith, from the Latin term *uberrimae fidae*, means that each party is permitted to trust on the representations of the other and that each should have a realistic expectation that the other is acting in good faith without attempts to conceal or deceive (Yeasmeen, 2015). Whereas the PSV owners have all the facts on hand, the insurer is disadvantaged in that he cannot examine all aspects of the proposed risks.

Proximate cause means the active, efficient cause that activates a series of events, which brings about some outcome, without the involvement of any force started and working actively from

a new and independent source (The Chartered Institute of Loss Assesors, 2016). This simply seeks to identify how the loss occurred and if it was because of the insured act. In motor insurance, the insurer seeks to establish whether the accident was simply an accident or was because of negligence by the driver.

Indemnity is a mechanism by which insurers deliver financial reparation to the insured, if the insured activity occurs. This compensation shall not exceed the actual amount of the loss, meaning that the insured shall not make a profit from their loss (Mose & Koluba, 2013). For example, if a vehicle is damaged, the insurer can indemnify the insured by mending or replacing the vehicle or by giving a cash sum, in lieu of the former (AKI, 2007). This cash sum is determined by the vehicle's value at the time of the accident.

Subrogation is the right of the insurers to implement, for their benefit, all the rights and remedies that the insured holds against third parties in respect of the subject matter (Gulshan, 2006). In underwriting, subrogation only applies where the contract is one of indemnity like motor insurance, where there is a clause giving the insurer subrogation rights. The insured is required to provide all assistance the insurers require in negotiating the claim and effecting recovery where that right exists.

In a case where a PSV owner assumes a right to recover loss from two or more insurers with whom he has affiliated policies, the principle of indemnity prevents the insured from being fully indemnified by each insurer as envisaged by principle of contribution. Contribution is the right of an insurer to call upon others similarly, but not necessarily equally liable to the sum insured to share the cost of an indemnity payment (Kibet, 2017) and it only applies to contracts of indemnity including motor insurance. In underwriting, contribution is applicable if a claim is made under a policy and there is another policy, which covers the same risk. Here, the insurer will only pay his share of the claim because the contribution condition reiterates the common law position that, if more than one policy is in force, the liability of the insurer is limited to their proportion of the loss (Wekesa, 2010).

2.2.2 Theory of Information Asymmetry

Akerlof (1970) observed that markets greatly suffer from informational asymmetry, which affects one party in a trade, ex-ante and ex-post. The automobile market is used to explain this concept, whose applications spread across the field, even to insurance. Four types of cars are presented; new cars, used cars, good cars and bad cars. Two fruits are juxtaposed to illustrate the problem- lemons and plums.

Lemons are the poor quality, low priced cars, which break down easily and require constant repair. Plums are the high quality, long lasting, expensive cars.

Borrowing from Akerlof, Auronen (2003) observes that in a market set up, the buyer has no way to ascertain whether the car is a plum or a lemon until they have purchased and used it. This is due to *information asymmetry*, which exists between the buyer and seller. Informational asymmetry is where one party to a transaction has more information than the other and hence the party with more information can take advantage of the other party's lack of knowledge. The price of the cars is a mathematical expectation of that of the plums and the lemons, assuming the buyer is only able to know that half of lemons and plums in the market are bad or good. The lemon sellers take advantage of the buyers' lack of knowledge, by selling the cars at a price higher than their actual worth due to the resulting price as per mathematical expectation.

Informational asymmetry results in two major problems; adverse selection and moral hazard. Adverse selection, adequately defined by Rejda and McNamara (2017), is the predisposition of persons with a higher chance of loss to seek insurance at standard rates. In automobile insurance for the example, the individual taking on the cover is more likely to know their risk characteristics for instance whether or not they are fast drivers, the regularity in which they drive, use of the automobile among others. It would be very difficult or even costly for an insurer to find out such information in detail making it possible for the insured to lie in favour of lower premiums (Geyer, Kremslehner, & Muermann, 2019).

Unless this is controlled, great loss will be incurred. This is a primary reason for pre-screening of insurance applicants. However, even with appropriate filtering methods, the insurer still faces the risk of loss, through the insured's activities after the policy is taken out. The ex-post activities, which may increase the severity of the loss, is known as moral hazard. The issue lies in the fact that people's view on possessions when the cost or replacement or repair lies on them is different from when it does not. Individuals tend to be more lackadaisical when the cost lies on another party. In motor vehicle insurance for example, a driver may choose to drive, faster or more recklessly knowing that they will be compensated in the event of an accident (Abbring, Chiappori, & Zavadil, 2008). PSV drivers tend to be less careful than drivers of private cars since the vehicles do not belong to them. The notion that costs from an accident will be incurred by insurers would perhaps make them even more reckless thus among the reasons they shy from covering this sector. Insurers attempt to control this through policy provisions, such as waiting periods and deductibles.

2.2.3 Agency Theory

Agency theory developed by Fama (1980) stipulates existence of principal- agent relationship where the agent undertakes to undertake principals activities for some consideration. While agency relationship is explicit in case of corporate managers and shareholders relationship, insurance underwriting by the insurers is best inferred from contractual relationship.

Agency theory as applied to insurance deals with the conflict of incentives resulting from the separation of ownership and management. From the investors' perspective, the management representing the insurance firm are their agents and hence must meet their objectives. Whereas some insurance firm in Kenya are listed in the stock exchange and hence under the regulation of Capital Market Authority (CMA), the unquoted ones must find a common ground between the management and the shareholders (Kollie, 2017).

However, some managers may take advantage of their positions for personal gains. Edwin (1939) theorises a white collar crime as those violations of law to which penalties are attached and where the violators use their positions of economic power, influence, or trust for the purpose of illegal gain, or to commit an illegal act for personal or organizational gain. Kibet (2017) reports that individuals who are likely to defraud an organization are the ones who live beyond their means. The researcher notes that of all factors that may contribute to fraudulent activities, organizational opportunity remains the main determinant aspect of white- collar crime. To what extent then have the insurance firms in Kenya suffered from fraud?

The issue of risk bearing amongst the company's stakeholders has been firstly highlighted by Fama (1980). The separation of power demands a delegation of authority and property right devolution from the owners/risk bearers to the manager. The manager is supposed to invest his human capital to promote the best interest of the owner. In order to guarantee that the management practices are in line with the shareholders' interests, managers are controlled by the market and they are evaluated through the company performance.

The insurance firms that ceased underwriting PSV insurance may have been informed by the poor performance. In this paper we can take a position that the firms that are not underwriting PSV insurance though they have a general cover licence may have been deterred by the frauds and poor performance in the industry. Kiragu (2014) observes that the incentive problem existing in the insurance market, may attempt the insurance firm managers to act for their personal advantage. Consequently, as the managers are not the risk bearers, the separation

between management and risk bearing encourages the managers to invest in riskier activities since they personally are not affected by the potential loss.

The PSV insurance subsector has several players in some forms of agency relationships, who may take advantage of claim process (IRA, 2011). According to (Lotuiya F. , 2014), the entire process of claims reporting, claim screening and claim processing presents an opportunity that has been exploited by the fraudsters. The fraud triangle theory coined by Cressey in 1950 looks at perceived opportunity, rationalization and pressure. Accordingly, fraudulent opportunity arises when the fraudsters sees a way to use their position of trust to solve the financial problem by justifying themselves as ordinary, honest people who are caught in a bad situation. The theory is criticized by (Dominey, Fleming, Kranacher, & Riley, Jr, 2012) who argues that the model cannot solve the fraud problem alone because two sides of the fraud triangle, pressure and rationalization cannot be easily observed. The drivers and conductors in *matatu* PSV sector have an opportunity to defraud the *matatu* owners in that they collect revenue on behalf of the owner, The owner has no fool proof means of verifying daily collections by the *matatu* crew. In their fraudulent activities, the *matatu* crew rationalize that the *matatu* owner is earning from other businesses or employment since they are working for his/her benefit, they should earn more than the current remuneration.

The fraud Scale theory by Albrecht mainly looks at three factors, situational pressures, perceived opportunities and personal integrity as ingredients of fraud. The situational pressures considers immediate environmental conditions like personal debts or losses. Where the pressure is high, there is likelihood of high fraud and likewise where the opportunities are high as a result of poor controls the fraud is also high. There is also a likelihood of high fraud where the personal integrity is low. It was not until the year 2003 when the certificates of good conduct were made mandatory for *matatu* crew with an aim of integrating and ensuring integrity among the players in the industry.

2.2.4 Public Interest Theory of Regulation

In this study we have demonstrated that information asymmetry in both the insurance sector and the public transport sector exits that leads to problems of moral hazard and adverse selection. This scenario therefore creates demand for information and because the information that individual and firms would produce privately will not equal the demand of principals, regulation therefore becomes necessary.

Public Interest Theory by Pigou (1938) emphasizes that regulation should maximize social welfare. The objective of regulation should be to mitigate the impact of significant market imperfections (or

market “failures”) compared to the ideal of a perfectly competitive market (Niehaus & Harrington, 2005). Regulation of insurance industry in Kenya has been under the commissioner of insurance until was creation of Insurance Regulatory Authority through the Insurance (Amendment) Act of 2006. While several insurance firms had ceased or gone bankrupt before the establishment of IRA, insurance firms have continued to shy away from PSV insurance underwriting (Irungu, 2015).

Insurance companies are heavily regulated to protect policyholders from the threat of an insurer’s insolvency. If the company goes bankrupt, policyholders may lose much of their investment in promised insurance benefit (Muriuki & Mutugi 2017). In Kenya, IRA monitors insurance companies to ensure that they are solvent enough to pay off cims. Claims paid lead to customers gaining trust of the insurance industry and therefore more confidence in spending on insurance products (Jus, 2013). In their regulatory role, the IRA have enacted price controls and fraud management mechanisms which have negatively affected insurance penetration in the country. The IRA price regulation framework, although intended to create competitive markets and lower premiums, have not served their intended purpose, for the overall insurance sector

Regulations in the transport sector have too been established ranging from mandatory third party insurance, tighter requirements on the motor vehicle crew, and sitting capacity of the vehicles among others. In 2003, the new government introduced reforms to PSV operation through Legal Notice 161 whose aim was to reduce PSV related accidents, improve commuter safety, stamp out illegitimate drivers and restore order to the PSV sector (Macharia, 2017).

Additional amendments have been made since 2003. The Traffic Act (Cap. 403), which focusses on the law relating to road traffic lays out the minimum age and working hours of PSV drivers. Further, the crew is to be paid a monthly salary by the PSV owner, as per Section 103A (6) of the Traffic (Amendment) Act No. 37 of 2012. PSV operators must belong to a SACCO or company before applying for a PSV license. This last amendment has been crucial in reducing fatalities, as NTSA regularly suspends the licenses of SACCOs whose members frequently commit traffic offenses (Macharia, 2017). The issue that this study addresses is why the low uptake of PSV insurance underwriting amidst all these regulations which seem to restore sanity in the public transport sector.

2.3 Empirical Review

This section documents findings of various researches conducted in the general area of insurance with a bias in underwriting on PSV insurance. Regulations of the insurance industry and transport industry, insurance industry practice and investors interests are also tackled from the research perspective in order to shed light on the role of the regulations in enhancing insurance uptake and ensuring economic sustainability of insurance firms.

2.3.1 Influence of Government Regulations and Reforms on Uptake of Insurance

Rejda and McNamara (2017) highlight the following reasons for government regulation; to maintain insurer solvency, to compensate for inadequate customer knowledge, to ensure reasonable rates for both premiums compensation and to make insurance available to the general public.

The Kenyan Government plays a regulatory role in this sector through the Insurance Regulatory Authority (IRA). The (IRA) was created by the Insurance (Amendment) Act of 2006 with the mandate of regulating, supervising and developing the insurance industry (IRA, 2017). Ramadhan (2009) studied the effect of the enactment of Legal Notice 161 of 2003 in respect to underwriting of claims in the PSV sector. This law, famously known as the 'Michuki rules' required, among others, that PSVs have speed governors, seatbelts and permanent crew members. The law was found to have brought about less significant emphasis on driver-associated issues. Nevertheless, fraud was a challenge in this sector, due to the issuance of forged motor vehicle inspection certificates, which increased the insurer's adverse selection.

In terms of the government's role in regulating the insurance sector, Kihara (2014), in analysing the strategies used by the IRA to safeguard compliance in the industry, found that there were challenges in their implementation on PSV insurance. PSV insurance is taken to be high risk, necessitating high capital requirements. This requirement, although crucial in mitigating insolvency, deters insurers from this field.

It is important to note that the government's actions have had a positive impact in the insurance sector. According to Kihara (2014), these regulations have promoted ethical behaviour, controlled the level of market undercutting and restored order to the sector, by restricting entry and exit of insurance firms.

2.3.2 Influence of Insurance Industry Practice on Uptake of Insurance

Frimpong (2016) argues that factors associated with the vehicle such as year of manufacture, value of vehicle, colour of vehicle, engine rating, vehicle sitting capacity, usage of the vehicle among other features of the vehicle influence the insurance premium. Several rating that insurance firms consider when determining the premiums, which encompass demographic characteristics of the policy holder, the vehicle itself and factors relating to policy type.

Demographic characteristics of the policy holder relating to age, occupation, and gender among others play a significant role in insurance underwriting and the premium itself. (Mcknight & Mcknight, 2003), noted that young individuals are risk takers. This means that they are more likely to take higher risks compared to the rest of the population. This can be explained by lack of driving experience. Braver and Temple (2003) study exhibited higher accident tendencies for young and elderly drivers. Their analysis resulted to a U shape curve for loss against age.

Most public hire vehicles which carry less than nine passengers charge lower premium rates. For buses and coaches defined as vehicles with a seating capacity of more than twelve including the driver, rating is based on the number of passengers which each vehicle may carry and the district in which it is being used. Account will have to be taken for those bus and coach operators covering large parts of the country or operate nationwide. Coaches are operated under a public service vehicle license which is dependent upon annual inspection. Coaches used for the transportation of supporters for various sports teams can be subject to malicious damage and vandalism and therefore attract higher premiums.

Those firms or organizations who operate small buses (defined as having between 9 and 16 passenger seats) may produce adverse consequences from a risk perspective. In order to justify its purchase a small bus company may be utilized to the greatest extent possible. There may also be a tendency for young and less experienced drivers to be used and servicing and maintenance may be kept to a minimum and be performed by less reputable garages (Canner, 2007).

Few empirical studies have been conducted in the field of PSV insurance in Kenya. Kamau (2007) found insurance fraud to be a reason for avoiding the PSV asset class. The sampled firms struggled to distinguish fraudulent claims from the genuine ones, due to corruption in the judicial system. As a result, many chose to cover PSVs that operated in organized fleets, which had internal control mechanisms. This locked out many 14-seater PSVs, which did not belong to such fleets.

Fraudulent claims are also cited as a reason by Wekesa (2010), who studied the challenges facing the underwriting of PSVs in Kenya. By sampling insurance companies that already insured motor vehicles, this study found that fraudulent claims, weaknesses in the judicial system and weak enforcement of traffic laws deterred them from this venture. These reasons contributed to the companies forming an overall PSV avoidance policy.

The lack of an insurance data sharing system has also cost the insurance companies heavily. Many fraudulent claimants have taken advantage of this loophole to drive these insurance companies into underwriting losses by launching several claims during the insurance period and benefiting from multiple insurance companies. The car insurance rates for private motorcars stands at roughly 3.5 – 4.5 % of the value of the car from most car insurance companies in Kenya. Jubilee insurance and APA insurance offer different insurance rates depending on the age and value of the vehicle but the majority of the industry still offers flat rates for all vehicles. While the IRA in Kenya had earlier mandated insurance companies to offer motor insurance covers in the range of 7% of the value of the vehicle, stiff competition and under cutting has led to the price decline to present levels.

2.3.3 Influence of Shareholders' Interest on Uptake of Insurance

Company perceptions were also studied by Kiama (2008), who studied the managerial perceptions of PSV insurance in the country. By sampling insurers who had not ventured into this field, it was found that the PSV drivers' substandard driving skills, which often lead to road accidents, were a key deterrent. Additionally, high start-up and operational costs were found to be a barrier to entry in this market, as a countrywide network was required for efficient service delivery.

In the legal field, studies have been done to evaluate the challenges facing the PSV insurance sector in Kenya. Lotuiya (2014) listed poor solvency regulations, excessive risk taking, poor managerial practices, insurance fraud and arbitrary court awards as the reasons for the collapse of PSV insurance firms. Further, the legal framework in the country was found to be insufficient to overcome these challenges

Mutua (2013) also carried out a study on the effect of fraudulent activities on the growth of the insurance industry in Kenya and did a case of selected insurance companies. The main aim of this study was to establish the level of fraud in the insurance companies and how it is affecting growth of the industry. The research was tailored towards determining if high levels of fraud among the representatives of the companies and/or clients are the major contributor to the slow

growth process of the insurance sector, which has seen litigations, loss of jobs and low public confidence in its importance as a key economic growth factor. The study adopted a descriptive research design. The target population included the 49 insurance firms in Kenya where a 6% sample was selected from. The study used both primary and secondary data and used regression analysis to analyse the data. From the results established from the study, majority of the respondents cited that misappropriation of premiums affected the growth of the insurance companies.

Ernst and Young (2011) undertook a survey on insurance fraud to determine the insurance fraud scenario, potential risk exposure, and economic impact and industry practices to counter fraud risk. The survey established that claims or surrender-related fraud is the highest followed by premium and employee-related frauds. Insurance fraud increases cost of insurance, making insurers lose business to competitors, and leads to higher premium for the policyholders. In addition, insurance fraud has implication on (threaten) the viability of insurance business and has a bearing on insurers' profitability.

The report revealed that though the negative effects of fraud are profound, they are often under-reported or discounted. Nevertheless, the prevalence of fraud has been on the increase be it retail, commercial or third-party insurance claim. In the area of general insurance, the study established that health insurance rated high in the number of claims relating to overstating of claims or document manipulation of non-existing hospitals. Twenty five percent (25%) of health insurance claims were fraudulent. Fraud has affected insurance firms operationally, financially and psychologically. On the part of insurance companies, the survey found insurers to fraudulently mis-sell products with regard to fraudulent misrepresentation of material information and/or premeditated fabrication.

In their regulatory role, the IRA have enacted price controls and fraud management mechanisms. According to Muriuki and Mutugi (2017), these price controls have negatively affected insurance penetration in the country. The IRA price regulation framework, although intended to create competitive markets and lower premiums, have not served their intended purpose, for the overall insurance sector.

2.4 Summary of the Literature Review and Research Gap

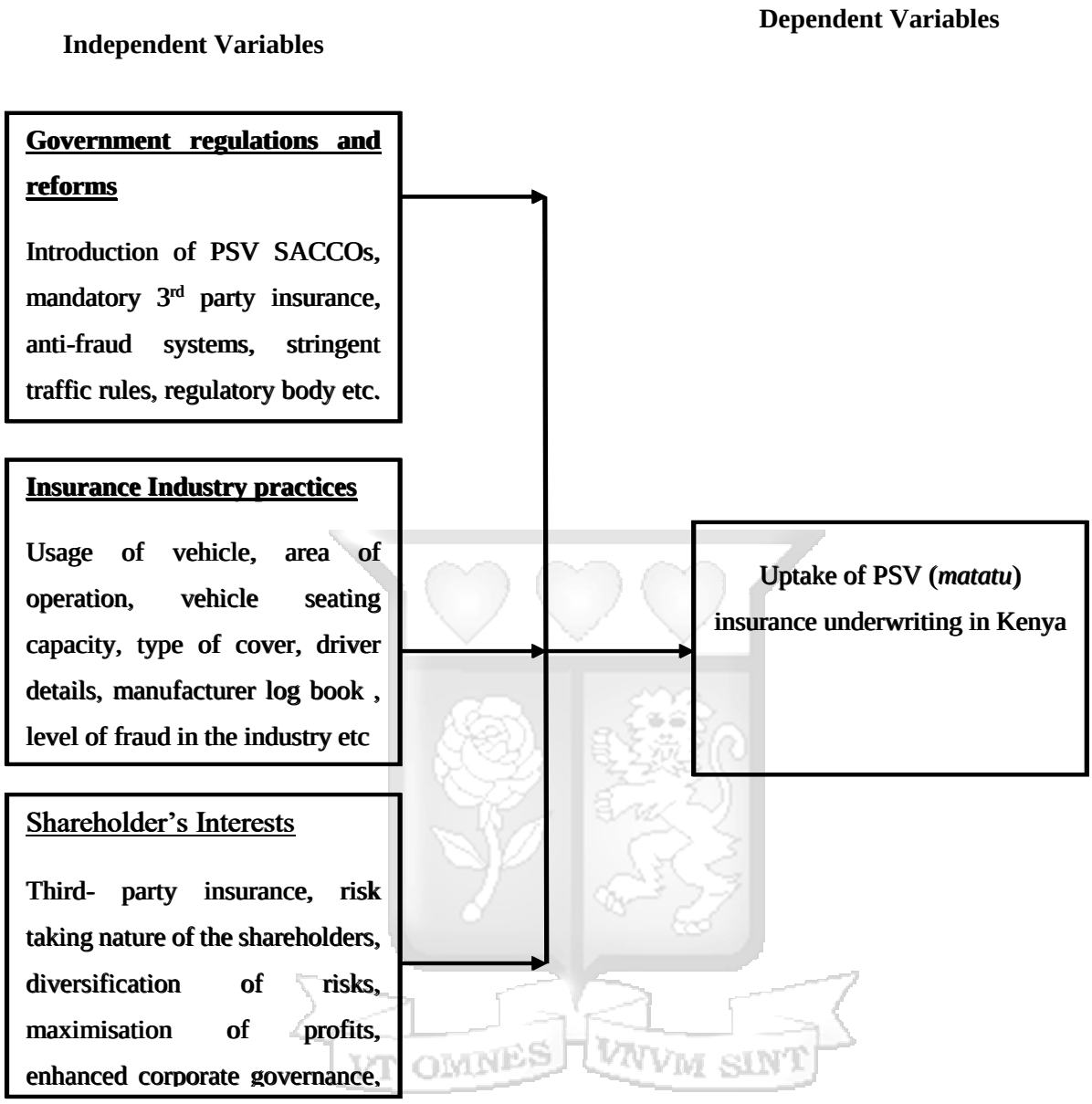
Kenyan PSVs are rather a unique phenomenon, due to the unstructured nature of this sector. Unscheduled services, fluctuating fares and poorly maintained vehicles are some of the challenges plaguing this sector (International Association of Public Transport, 2008). Similar PSV's exist in Uganda and Tanzania, facing the same challenges.

The previously identified studies do acknowledge that the Government of Kenya, through the IRA, has played a role in contributing to the regulation of the overall insurance sector. Through legislative action, they have ensured that the country's public transport sector is well protected against excessive loss of life and property. Besides restoring sanity to this sector, they have also ensured that it is well protected in the event of any accidents.

The general objective of this paper is to identify the factors that affect the uptake of insurance underwriting on public service vehicles plying for hire in Kenya. Company policy has been identified as a leading motive (Wekesa, 2010). Fraudulent claims as have also been discussed by Kamau (2007) and Wekesa (2010) as causing the reluctancy in insurance uptake in Kenya. Yet, other reasons have been overlooked, such as the level to which industry practice affects this decision process, as well as shareholder decisions. This paper attempts to bridge this existent gap, as well as provide recommendations on the uptake of PSV insurance.

2.5 Conceptual Framework

Conceptual framework is a diagram showing the relationship of the dependent and independent variables. The independent variables are the determinants of public service insurance uptake by insurance firms in Kenya, which are regulatory related, insurance industry related and investors related. The dependent variable is the uptake of PSV insurance by the insurance firms.



Source: Researcher (2019)

Figure 2.5.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details how the study was carried out. It outlines the research philosophy, research design, the target population, and the sampling technique, sources of data i.e. data collection methods used and data analysis. Finally, it consists of the validity and reliability of research instruments and ethical considerations that were considered in the course of the study.

3.2 Research Philosophy

The purpose of any study is to answer specific questions. While no new theory may be developed, researches contribute to new knowledge (Saunders, Lewis & Thornhill, 2008). The research philosophy adopted by a researcher generally contains general assumptions, which underpin the research strategy and methods chosen by the researcher. This study adopted positivism philosophy due to use of existing theories and the fact that the study results can be generalised. The research was undertaken in a value freeway in that the researcher could not alter the substance of the data collected.

3.3 Research Design

Research design is a plan of investigation to obtain answers for research questions (Cooper & Schinder, 2008). The study adopted a cross sectional survey design. Cross-sectional studies are a form a class of research methods that involve observation of all population, or a representative subset, at a specific point in time whereby data is collected once. This method enabled the researcher to obtain information needed to describe opinions and views of insurance companies on industry, regulatory and reforms and shareholders' interests' factors that determine uptake of insurance underwriting for PSV for hire. This method aided in the collection of data which then made it possible for the analysis to take place.

3.4 Population of the Study

The study population consisted of thirty-eight insurance companies that were registered by IRA and operating in Kenya as at 2018. These are companies which are licensed to offer general risk insurance which and who were operating and providing various insurance products and services in Kenya.

3.5 Sampling Technique

The study employed a census whereby all 38 companies that offer general risk insurance products including motor insurance. Data pertaining to determinants of PSV insurance underwriting data was collected from business development managers, risk officers, underwriters. The respondents were also purposively selected since they were deemed conversant with the insurance products and service of the firms and were in positions of agents of the shareholders. They gave a balanced insight across the insurance sector in Kenya.

3.6 Data Collection Instruments

Semi- structured questionnaires which contained both open and close ended questions were used to collect primary data. The questionnaires contained four sections; the first section focused on information about the respondents such as age, gender, the number of years that the respondents have worked in the organisation and the number of years that the company has been in operation. The second section focused on the types of covers that are offered to matatus and to what extent they are offered. Also, it focused on the factors that insurers consider when underwriting matatus. This was structured with regards to the three main factors that is industrial, regulatory and shareholder's interests. The level of relevance of these factors is brought out using a Likert scale where '5' represents very important, 1 represents 'not important' and intermediate rating of '3' as important, '2' as slightly important and '4' as fairly important. The third section concentrated on the main inhibitors to underwriting matatus with respect to industrial, regulatory and shareholder's interests. A Likert scale was used for this section as well while last section mainly considered mechanisms that would increase uptake of matatu insurance.

The questionnaires were administered personally or delivered through the help of a researcher, where face to face interviews would take place. Others were deployed through electronic means such as email. Phone calls were also used as a follow-up means to ensure questionnaires were completed.

3.7 Reliability and Validity of Research Instruments

Reliability refers to the extent to which a measure of a phenomenon provides stable and consistent results (Huck, 2007). The research questionnaire was tested for internal consistency using the Cronbach Alpha Coefficient. Internal reliability was measured by calculating the Cronbach's Alpha. The Cronbach's Alpha of the questionnaire was 0.78. A pilot study was conducted whereby 1 questionnaire was issued to an insurance company that offers matatu insurance and 4 questionnaires were issued to companies that do not offer matatu insurance. Following this pilot study, some questions were altered and rephrased in order to ensure clarity in the questionnaire.

The validity of a data collection instruments is the accuracy or meaningfulness and technical soundness of the research. It is a measure of how well a test measures what it was supposed to measure. Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study which in this study was carried using the experts in the insurance field. The university supervisor also checked for both construct and content validity before the questionnaire was issued to the respondents.

3.8 Data Analysis

Primary data collected from the questionnaires was input into a computer system for analysis using the R software. The data was ordinal in nature since the numbers obtained from the Likert Scale are ordered categories.

Descriptive analysis was used to summarize and describe the collected data which included bar charts and frequency tables to give an overview of the responses obtained in line with the study's objectives. It also captured the similarities and/ or differences across the two different groups that is those who insure matatus and those who do not. The descriptive statistics also analysed responses on the questionnaires i.e. what proportion ranked what preference with regards to Likert Scale information. Principal component analysis (PCA) was also done to show the most important factors within each of the study objectives that influence uptake of PSV underwriting in Kenya.

Inferential statistics were applied to determine how the probable solutions in the matatu insurance sector would affect uptake of PSV insurance. This was done through a principal component analysis (PCA) and a regression model using the variables that contribute the largest to the principal components.

A principal component analysis (PCA) was used to extract the important information from this multivariate data set. PCA usually reduces the number of variables of a data set while preserving as much information as possible. Following the identification of the insurance industry practices and government regulatory factors that weighed heavily on the principal components a logistic regression was performed. A logistic regression studies the relationship between a categorical dependent variable and a set of independent variables. It is used when the dependent variable is binary meaning that it takes on two values i.e. uptake of matatu insurance or no uptake of matatu insurance. It is preferred to a simple linear regression because ordinal data should not be treated as continuous and one would be assuming that the numerical distance between each subsequent category on the Likert is equal which is incorrect. Therefore, a logistic regression is preferred because of the nature of the data it cannot be fit to simple linear regression. Two independent logistic regressions are performed. The first tries to see the effect of implementing certain regulatory factors on uptake of PSV insurance and the second one tries to identify the effect of implementing probable industry factors to underwriting PSV.

$$logit = log \frac{P}{1-P}$$

$$ln \frac{P}{1-P} = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

The LHS represents the logit: log of odds ratio

Where;

P represents the probability of observations with an outcome 1. In this case 1 represents uptake of matatu insurance.

1 – P Represents the probability of an outcome 0. 0 represents lack of matatu underwriting by insurance firms.

β Represents the y coefficient.

X_1 Represents Introduction of BRT system.

X_2 Represents Restricted Access of PSVs to towns' centres.

X_3 Represents restricted limit of number of matatus operating as PSVs.

X_4 Represents Withdrawal of 14-seater vehicles.

And for the second regression:

X_{21} Represents Mergers of PSV insurance underwriters.

X_{22} Represents Centralized data systems in the insurance industry.

X_{23} Represents Strong internal controls in the insurance firms.

3.9 Ethical Considerations

When conducting data collection, the research assistant availed an introductory letter from the university requesting respondents to participate in the data collection exercise. This introductory letter contained the university's details, researcher's details and most importantly the purpose of the research. The letter was also used to get permit from NACOSTI and then availed to all the respondents in the targeted organisations to assure them that the study was strictly and legitimately for academic purposes. Lastly, all the data collected was treated with utmost confidentiality and a copy of research results can be availed on request.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This fourth chapter highlights the findings of the research. The chapter outlines the profile of the respondents, descriptive statistics of the study objectives, which are presented in form of tables, charts and pie charts. Brief discussion of the study results are also presented to provide answers to the study objectives.

4.2 Response Rate

The study obtained a response rate of 92 % (n = 35) from all the 38 insurance firms that were considered. This means that only 3 firms (8%) did not responded from the sampled firms.

4.3 Profile of Respondents

This section reviews the demographics of the respondents according to their response rate, age, gender and number of service years in their organisations. Figure 4.3.1 represents the age of the respondents Vis- a -Vis the number of years worked.

4.3.1 Age of the respondents

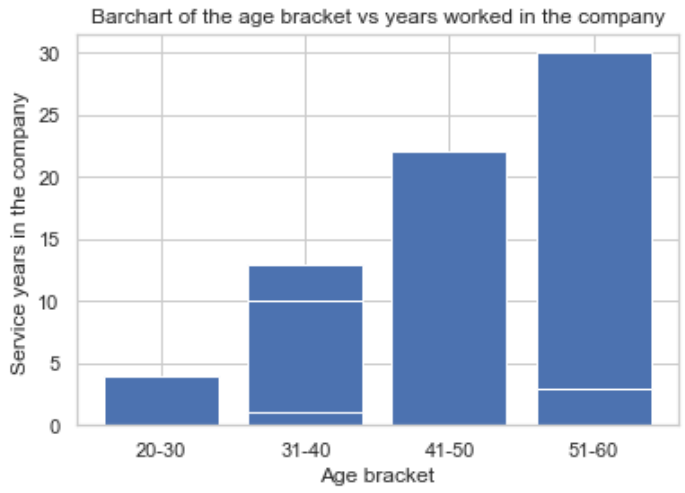


Figure 4.3.1: Age bracket vs years worked in the company

Source: Research Data (2019)

Figure 4.3.1 summarises data collected from the respondents who filled in the questionnaires. 25.7% (n = 9) of the respondents are in the 20-30 age bracket. The maximum number of years

someone has served in this age bracket is 4 years while the median number of years that people have worked for their respective companies is 3 years. Although the respondents in this age bracket are the youngest, it can be argued that the quality of their responses was befitting. This is also supported with the fact that the average number of years that they have worked in their companies was found to be 2 years implying that they have attained enough experience to fill the questionnaire. Although, it is important to note that the mean as a measure of central tendency takes in every value and thus it is heavily influenced by outliers.

For the 31-40 age bracket, there were 14 respondents; 40% which covers majority of the respondents. The maximum number of years someone in this age bracket has worked for their company is 13 years. The median number of years that the respondents have worked is 5.5 years. While the average number of years for individuals in this age bracket was 5 years.

22.8% (n= 8) of the respondents were in the 41-50 age bracket. The maximum number of years someone has worked in their respective company is 22 years while the median years is 7 years. More so, the average number of years people in this age bracket have worked in their companies is 9 years.

For the respondents in the 51-60 age bracket, there were 4 respondents (11.4%). The maximum number of years someone had worked in their companies was 30 years while the median age is 8 years. In addition, the mean number of years that the individuals in this age bracket have worked is 11 years.

We also requested the respondents to indicate their gender in the questionnaire whose results are shown in Figure 4.3.2

4.3.2 Gender of the Respondents

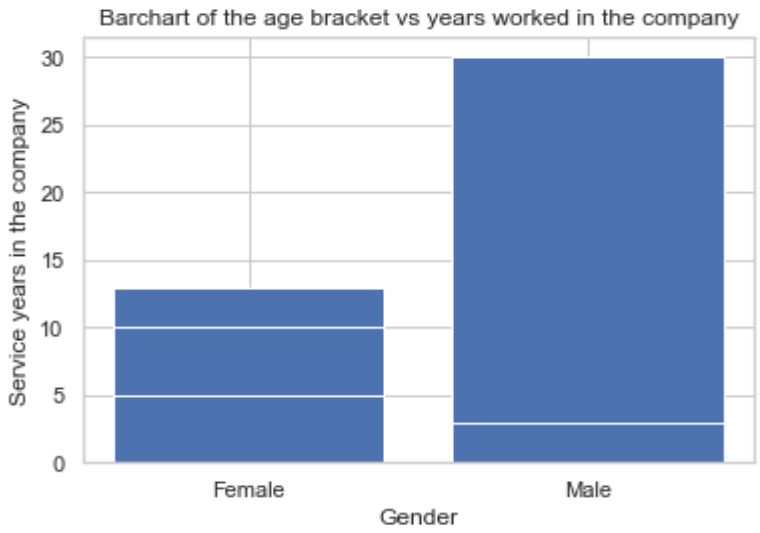


Figure 4.3.2: Gender vs years worked in the company

Source: Researcher (2019)

Figure 4.3.2 shows that 74% (n = 26) of the respondents were male while 26% of the respondents were female. The maximum number of years a male respondent has worked is 30 years while that of the females is 13 years. The median years worked for the males is 4.5 years while that of the females is 3 years.

Experience of the respondents in terms of the number of years worked in the company are shown in Figure 4.3.3

4.3.3 Work Experience

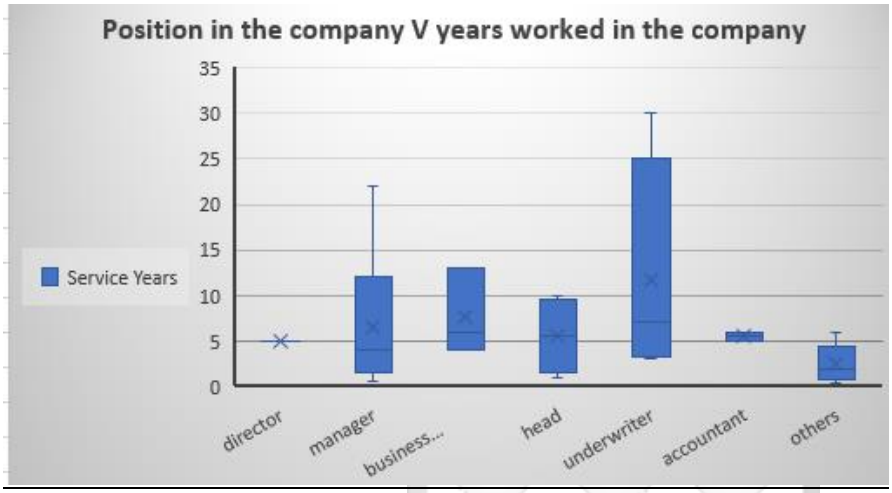


Figure 4.3.3: Position vs years worked in the company

Source: Research Data (2019)

Figure 4.3.3 shows how the 35 respondents were grouped into different categories according to their roles in the company. The director (n=1) is a business development director who has served the company for 5 years. The managers 45.7% (n=16) were managers of different departments which include sales, claims, reinsurance, business development, risk, finance operation. The minimum number of years a manager has worked in their company is 0.67 years (8 months) while the maximum is 22 years. The average number of years managers have worked for their companies is 6.5 years.

Business represents business development 8.6% (n=3). The minimum years a respondent in business development has worked for their company is 4 years while the maximum is 13 years. The mean number of years that respondents in business development is 7.6 years. Head 8.6% (n=3) represents heads of different departments which include marketing, risk and finance. The minimum number of years that a head of a certain department has worked is 1 year while the maximum is 10 years. The mean number of years that a head of a department has worked is 5.5 years.

The underwriters were only 11.4% (n= 4) of the respondents. The minimum number of years that an underwriter has worked is 3 years while the maximum number of years is 30. The mean years of service at their companies is 11.75 years. The accountants (n=2). Others 14.3% (n= 5)

represents a broker, claims officer, legal officer, executive trainee and a reinsurance officer. The minimum number of years a respondent in the others category has worked is 0.4167 years (5 months) while the maximum is 6 years.

4.4 Objective One: To establish the extent to which the government regulations and reforms affect the uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

The following section captures a summary of how government regulations and reforms affect the uptake of insurance underwriting on public service vehicles plying for hire in Kenya. It is divided into two; the insurance firms that underwrite matatus insurance and the insurance firms that do not underwrite matatus insurance.

4.4.1 Responses by Insurance Firms that Underwrite PSV (matatu) Insurance

As per 2018, there are only three insurance firms that were underwriting matatus insurance. Table 4.4.1 summarizes how the respondents from the three firms gauged the relevance of these regulations and reforms when underwriting matatus

Table 4.4.1: Responses on government regulations by insurance firms that underwrite matatus

	Slightly important	Important	Fairly important	Very important
Introduction of PSV SACCOs	0	0	1	2
Mandatory third party insurance	0	0	0	3
Anti-fraud systems	1	0	0	2
Stringent traffic rules (speed limits.)	0	0	0	3
Maximum limit of third party liability	0	0	2	1
Existence of a regulatory body	0	1	0	2

Source: Research Data (2019)

Table 4.4.1 shows that the most important regulations that are considered when underwriting matatus are the mandatory third-party cover and the stringent traffic rules. This is consistent with the Motor Vehicle (Third Party Risk) Act, Cap 405 that was instituted in 1979. Its main objective is to protect the third party. The stringent traffic rules have to do with wearing of uniforms, installation of seat belts and speed governors in the matatus. These two factors are pivotal prior to underwriting matatus.

4.4.2 Responses by insurance firms that do not underwrite PSV (matatu) insurance

Table 4.4.2 presents data collected from 32 firms that do not underwrite PSV plying for hire insurance and hence shows the extent of these regulations in deterring them to underwrite PSV plying for hire insurance

Table 4.4.2: Responses on government regulations by insurance firms that do not underwrite matatus

	Not at all	Small extent	Some extent	Moderate extent	Great extent
Existence of regulator	46.9%	25.0%	0.0%	18.8%	9.4%
Fire/ restricted passenger capacity	43.8%	18.8%	12.5%	6.3%	18.8%
Mandatory Insurance cover	50.0%	21.9%	9.4%	9.4%	9.4%
Stringent traffic control (safety belts, speed limits)	34.4%	31.3%	6.3%	18.8%	9.4%
Controlled insurance premiums	40.6%	21.9%	12.5%	6.3%	18.8%
Public service vehicles inspection	43.8%	18.8%	12.5%	6.3%	18.8%
Integrity requirement for vehicle crew (good conduct)	34.4%	6.3%	12.5%	12.5%	34.4%
The proposed bus rapid transport system	59.4%	21.9%	6.3%	3.1%	9.4%
Introduction of NTSA	62.5%	21.9%	3.1%	9.4%	3.1%
Establishment and existence of Traffic Police Department	62.5%	12.5%	9.4%	9.4%	6.3%
Third Party Risk	34.4%	12.5%	6.3%	18.8%	28.1%
Mandatory PSV saccos/ companies	53.1%	18.8%	12.5%	3.1%	12.5%

Source: Research Data (2019)

Table 4.4.2 shows that the greatest deterrents to matatu underwriting by insurers is the integrity requirement for the vehicle crew (34.4%) and the third-party risk (28.1%). This lack of integrity by the matatu crew is due to the irresponsible nature of matatu drivers as their income and job security is dependent on daily passenger loads yielding the daily profit mark set by the matatu owners. To achieve this, they break traffic laws, weave in and out of traffic, cut off other vehicles while using sidewalks to bypass traffic which endangers the lives of the pedestrians. This factor negatively affects the uptake of insurance underwriting on public vehicles plying for hire in Kenya.

The third-party risk is also a great deterrent for insurers if a matatu fails to take this cover. This factor is seen to appear in both the insurers who underwrite matatus and those who do not underwrite matatus and thus it is considered a non- trivial factor in affecting the uptake of matatu underwriting.

4.5 Objective Two: To determine the influence of industry practice on uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

This section covers the influence of insurance industry practice on insurance underwriting on public service vehicles plying for hire in Kenya.

4.5.1 Responses by Insurance Firms that Underwrite PSV (matatu) Insurance

Table 4.5.1 presents data collected from the three that underwrite PSV plying for hire insurance and hence shows how the insurance industry practices endear to this product.

Table 4.5.1: Responses on insurance factors by firms that underwrite matatus

	Not at all	important	Fairly important	very important
Usage of vehicle	0	1	0	2
Area of operation	1	1	1	0
Vehicle seating capacity	1	0	0	2
Type of cover (TPO,TPO& T)	0	1	0	2
Driver details(age, experience..)	1	0	1	1
Manufacturer log book vehicle details (Year, type)	1	1	0	1
Level of fraud in the industry	1	0	0	2
Level of competition	0	1	1	1
Vibrant agents/brokers	0	0	2	1
Strong internal controls in the insurance firm	0	0	1	2

Source: Research Data (2019)

Table 4.5.1 shows that these insurance factors they consider when underwriting matatus are the usage of the vehicle, the seating capacity, the type of cover issued, the level of fraud in the industry and strong internal controls in the insurance firm. The seating capacity is important because public hire vehicles that carry less are charged lower premiums. The type of cover issued is also considered when calculating premiums thus would consequently affect the uptake of matatu underwriting by insurers.

4.5.2 Responses by Insurance Firms that do not Underwrite PSV (matatu) Insurance

Table 4.5.2 shows the responses given by the 32 firms that responded to the questionnaire among 35 firms that do not underwrite matatus insurance.

Table 4.5.2: Responses on industry factors by firms not underwriting PSV (matatu) insurance

	Not at all	Small extent	Some extent	Moderate extent	Great extent
Fradulent claims	0.0%	0.0%	3.1%	12.5%	84.4%
Amount of damages awarded by courts in case of claims	0.0%	0.0%	12.5%	18.8%	68.8%
Enforcement of traffic rules	12.5%	9.4%	28.1%	25.0%	25.0%
Experience and competence of psv (matatu driver)	3.1%	12.5%	0.0%	15.6%	68.8%
Competition in the industry	31.3%	25.0%	21.9%	12.5%	9.4%
Condition of the vehicles	3.1%	9.4%	15.6%	25.0%	46.9%
Insurance Premiums by the vehicle owners	12.5%	28.1%	6.3%	12.5%	40.6%

Source: Research Data (2019)

Table 4.5.2 shows factors that have a great influence on matatu underwriting as fraudulent claims, amount of damages awarded by courts and the experience and competence of PSV. The fraudulent claims (84.4%) come about because the PSV insurance subsector has several players, the insurance firms that underwrites the risk, loss adjusters who investigate complex claims on behalf of the insurer, loss assessors who act on behalf of policy holders to submit a substantial or complex claim, the traffic police department that issues police abstract in case of a claim, the garages that repairs the vehicles. This entire claims process presents an opportunity that can be exploited by fraudsters

The experience and competence of PSV (68.8%) is also captured as one of the non-trivial elements in the industrial practice and culture. Young matatu drivers are known to be risk takers which can be explained by the lack of driving experience. This affects the willingness of potential insurers from underwriting matatus.

4.6 Objective Three: To establish the influence of shareholders' interests on uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

This section covers the influence of shareholders' interests on insurance underwriting on public service vehicles plying for hire in Kenya as viewed by the respondents.

4.6.1 Responses by Insurance Firms that Underwrite PSV (matatu) Insurance

Table 4.6.1.shows the responses given by the three firms currently underwriting PSV insurance

Table 4.6.1: Responses on shareholder's interests by firms that underwrite matatus

	Not at all	important	Fairly important	very important
Ready business (mandatory 3rd party insurance)	0	0	0	3
Risk taking nature of the shareholders	0	0	0	3
Diversification of risks	0	1	0	2
Maximisation of profits	0	0	1	2
Maximum limit of third party liability	0	0	2	1
Corporate governance through a regulator	1	1	0	1

Source: Research Data (2019)

Table 4.6.1 confirms the well-known fact that the mandatory third-party insurance keeps occurring for firms that underwrite matatus because it is a requirement by law and consequently would influence a firm's decision to underwrite matatus. The risk-taking nature of the shareholders is also very important because matatus are a risky class of PSV due to their well-known recklessness on roads and would therefore hinder insurers from taking on more risks especially because underwriting matatus results in losses.

4.6.2 Responses by Insurance Firms that do not Underwrite PSV (matatu) Insurance

Table 4.6.2 shows the responses given by the 32 respondents among the 35 firms that do not underwrite PSV insurance.

Table 4.6.2: Responses on shareholder's interests by firms that do not underwrite matatus

	Not at all	Small Extent	Some Extent	Moderate Extent	Great Extent
Risk aspect of the product (PSV insurance)	9.4%	3.1%	3.1%	12.5%	71.9%
Reduced profits due to high insurance claims	9.4%	3.1%	6.3%	15.6%	65.6%
Nature of the shareholders	28.1%	15.6%	18.8%	12.5%	25.0%
Risk attitudes of the investors	18.8%	18.8%	18.8%	9.4%	34.4%
Solvency and liquidity constraints facing the firm currently	46.9%	12.5%	6.3%	18.8%	15.6%
No longer interested in this product (PSV underwriting)	21.9%	6.3%	0.0%	6.3%	65.6%

Source: Research Data (2019)

Table 4.6.2 shows that risks associated with underwriting matatus could be political, regulatory or financial. These risks are the major deterrents to matatu underwriting which explains the 71.9% of the respondents who agreed to a great extent that it inhibits the firm from underwriting matatus. Also, the reduced profits as a result of the colossal fraud that takes place is also a great

deterrent to matatu underwriting (65.6%). Also, the fact that these firms are no longer interested in underwriting matatus came out strongly at 65.6%.

4.7 Logistic Regression Results

The low uptake of PSV (matatu) underwriting in Kenya prompted this study to examine from the insurers perspective on what mechanisms should be employed to enhance insurance uptake. The questionnaire had both structured and open ended queries for this purpose. It was deemed difficult for the respondents to respond to this section on behalf of the shareholder and therefore the section contained regulatory and insurance industry factors.

Principal component analysis (PCA) (see, Appendix VI) was carried to determine the most important factors that would enhance the uptake of PSV (matatu) underwriting. Using the eigen value criterion (Kaiser, 1960) which asserts that the most important components are those whose eigen value is greater than 1, we considered 8 components, which are; Restricted access of PSVs to town centres, Introduction of the BRT system, Restricted limit of number of matatus operating as PSVs Withdrawal of 14-seater vehicles and non- registration of matatus on the government regulation , while the insurance industry factors were, Mergers of PSV insurance underwriters, Centralized data systems in the insurance industry and Strong internal controls. These factors explain 78.7% of the cumulative proportion which are enough to explain how insurance industry practice together with government regulation influence the uptake of matatu insurance by insurers.

Two independent logistic regressions are conducted; one seeks to find out the effect of implementing insurance industry factors on the uptake of matatu insurance while the other seeks to find out the effect of implementing government mechanisms on the uptake of matatu insurance. A limitation to the study is that there were no proxies for shareholder's interest and thus a logistic regression could not be performed to determine how new mechanisms concerning the shareholders' interests would affect uptake of matatu insurance.

Table 4.7.1 shows the logistic regression results for Government regulations.

Table 4.7.1: Logistic regression results for government regulations

Coefficients					
	Estimate	Odds Ratio	Std error	Z value	Pr(>|z|)
Intercept	2.066	7.893	3.341	0.618	0.536
Restricted access of PSVs to towns	0.177	1.194	0.674	0.263	0.792
Introduction of BRT system	0.143	1.153	0.734	0.194	0.846
Withdrawal of 14 seater vehicles	-0.983	0.374	1.169	-0.841	0.401
Non-registeration of 14 seater vehicles	-0.178	0.837	0.904	-0.197	0.844
Restricted Limit of number of matatus operaring as PSVs	-0.748	0.473	0.734	-1.020	0.308

Source: Research Data (2019)

Odds are the probability of a successful event; in this case the uptake of matatu underwriting is the successful event. In order to obtain the odds ratio one needs to take the exponential of the estimate. The result is the odds- ratio. Normally, an odds-ratio greater than 1 represents a positive association between the dependent variable and the independent variable. Conversely, an odds-ratio that is less than one represents a negative association between the dependent variable and the independent variable.

In this case, if the government were to restrict the access of PSVs to town centres then the odds in favour of matatu underwriting by insurers would be 1.194 times larger. In the same breadth, the odds in favour of matatu underwriting given that the BRT system is implemented would be 1.153. On the contrary, if the government were to facilitate the withdrawal of 14-seater vehicles the odds in favour of underwriting matatus by insurers would reduce by 0.374. Non-registration of these matatus would also have a similar effect or reducing the odds in favour of matatu insurance by 0.837. Lastly, by restricting the limit of number of matatus operating as PSVs the odds in favour for matatu underwriting would decrease by 0.473.

The logistic regression results for industrial factors are shown in Table 4.7.2

Table 4.7.2 Logistic Regression for industrial factors

Coefficients					
	Estimate	Odds Ratio	Std error	Z Value	Pr(>|z|)
Intercept	-91.850	0.000	19110.000	-0.005	0.996
Mergers of PSVs insurance underwriters	0.014	1.014	0.753	0.019	0.985
Creation of mutual insurance companies	-1.059	0.347	0.893	-1.185	0.236
Centralized motor insurance systems	0.692	1.997	44.710	0.000	1.000

Source: Research Data (2019)

Table 4.7.2 shows that the insurance industry factors that would increase the odds of matatu underwriting if implemented are merging of PSV underwriters and having a centralized motor data system by 1.014 and 1.997 respectively. On the other hand, creating of mutual insurance companies would lead to a decrease in the odds favouring matatu underwriting by 0.347. It is key to note that the variable strong internal controls was dropped from the model because when included the results were spurious.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter details the discussions and conclusions made from the analysis of the data collected and makes recommendations based on these conclusions. This chapter offers insights into the insurance companies especially those that deal with matatu insurance and the regulatory bodies such as the IRA and the government. This chapter also looks at potential policy implications of the findings.

5.2 Discussion

This study investigates how relevant stakeholders in the insurance sector affect the uptake of matatu underwriting by insurance firms. Following from this, the study also examines likelihood of uptake of matatu insurance by insurance firms by implementing new mechanisms in the industry. The following section covers the discussion with respect to each objective.

5.2.1 Effect of government regulations and reforms on uptake of insurance underwriting on public service vehicles plying for hire in Kenya

Regarding the regulations and reforms in the transport and industry sector, the mandatory third-party insurance and stringent traffic rules are the most frivolous factors that are considered when insuring matatus according to the respondents. It is important for all vehicles and especially matatus to have this cover against third parties for those who are injured in the occurrence of an accident to have a form of recourse. Stringent traffic rules are a primary issue in the transport industry due to the incessant flouting of these rules by matatus drivers and conductors. This usually leads to enormous cases of road accidents which has a ripple effect of increasing liabilities to insurance firms. Contrary to finding the traffic rules to be an issue in this sector Kihara (2014) found that the government's actions have had a positive impact in the insurance sector and the regulations promoted ethical behaviour. The difference in results could be brought out by the different time periods in which these two studies were conducted. This is because the study by Kihara (2014) seems to have been conducted soon after the implementation of Michuki Rules.

5.2.2 Influence of industry practice on uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

The results suggest that industrial factors such as usage of the vehicle, vehicle sitting capacity, type of cover, level of fraud in the industry are the most non-trivial factor when it comes to underwriting matatus. These findings are in line with the findings of (Frimpong, 2016) who shows that factors such as year of the manufacturer, value of the vehicle, usage of the vehicle, vehicle sitting capacity are pivotal when determining insurance premiums. Therefore, these same factors are considered important when deciding whether to underwrite matatus.

5.2.3 Influence of shareholders' interests on uptake of insurance underwriting on public service vehicles plying for hire in Kenya.

Relating to the shareholder's interests, the mandatory 3rd party cover (ready business) and the risk-taking nature of the shareholders are the most crucial factors when insuring matatus. The mandatory 3rd party cover is important to the shareholders' because this is a minimum requirement for all vehicles and thus a vital point when deciding whether to insure matatus or not. The risk-taking nature of the shareholders would influence whether the insurance firm will underwrite matatus which is the riskiest class of the PSVs or whether they will insure the safer options such as Ubers and taxis.

5.3 Conclusion

The study seeks to investigate the determinants of uptake of insurance underwriting on PSVs plying for hire, commonly referred to as matatus. It does so through three different lenses i.e. regulations that the government has put in place, industry practices that either encourage or discourage matatu underwriting and lastly the interests of the shareholders concerning their notable apprehension towards underwriting matatus.

The results suggest that the most imperative considerations regarding government regulations are compliance with traffic rules and the mandatory third cover. The essential components concerning the industry practices are sitting capacity, type of cover, level of fraud in the industry. Ultimately, the shareholders pay the highest regard to mandatory third-party cover and their risk-taking nature.

5.4 Recommendations

The main contribution of this study was to clearly bring out the factors that affect uptake of insurance underwriting on public service vehicles plying for hire in Kenya. Unlike (Wekesa, 2010) who found that company policy was the leading factor affecting matatu insurance this study shifts its focus to industry practices, the interest of the shareholders and the government as well.

It was agreed almost unanimously by the respondents that a centralized motor insurance system would aid in the consideration of insurance firms to underwrite matatus. This would aid in disseminating information of the unruly matatu drivers or the ones who are highly likely to register fake claims thus leaving the insurance firms to deal with the non-dubious matatu drivers. It will enable insurance firms to 'filter' the fraudulent claims. Thus, a centralized motor insurance system will mitigate the fraud cases that have come up as an issue in this sector.

Moreover, implementing of strong internal controls in insurance firms to eradicate the rot that is collusion of employees and the fraudsters in processing fake claims. This registration and processing of fake claims would eventually lead to reduced profits for insurance firms. Thus, enforcing policies in insurance firms that would make it close to impossible for these collaborations to take place would be a positive step in enhancing matatu underwriting by insurance firms. The issue of fraud also came up in other studies Kamau (2007) and Wekesa (2010).

In addition to this, it is important for the regulators to ensure that the matatu crew and especially the drivers are experienced drivers who are of age. This is in order to minimize the number of accidents occurring that may be caused by inexperienced drivers.

5.5 Limitations of the Study

The three key limitations in the study are the imbalanced data whereby only 3 of the 35 insurance firms that were interviewed underwrite matatus. The other limitation is the relatively small data set. Lastly, this study only focuses on Kenya and does not cover any comparison with other developing nations.

5.6 Suggestions for Further Research

Based on the study and findings made recommendations for further research would be to perform a comparative study between Kenya and South Africa who have a similar means of transport to the matatus. Another suitable recommendation is to find out how the reintroduction of the SACCO model which was meant to bring order in the matatu industry has affected the level of fraud in the industry; whether this has brought about any decrease in the fraud level. Also, whether this new system has brought about a decrease in the number of claims registered.

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APPENDICES

Appendix I: Introduction Letter

Strathmore Business School

21st November 2018

To Whom It May Concern

Dear Sir/ Madam

RE: FACILITATION OF RESEARCH – JOSEPH NJOGU MUNGAI

This is to introduce Joseph Mungai who is a Master of Business Administration student at Strathmore Business School, admission number MBA/92502/16. As part of our MBA Program, Joseph is expected to do applied research and undertake a project. This is in partial fulfilment of the requirements of the MBA course. To this effect, he would like to request for appropriate data from your organization.

Joseph is undertaking a research paper on **"Determinants of Low Uptake of Insurance Underwriting of Public Service Vehicles Plying for Hire in Kenya".** The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and shall be willing to provide any further information if required.

Yours sincerely,

Dr. Nancy Njiraini.
Director, Graduate Programs.

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Appendix II: Questionnaire

RESEARCH QUESTIONNAIRE

PART A

DEMOGRAPHIC INFORMATION OF THE RESPONDENT

1. Name of the company:

.....

2. Position in the company:

.....

3. What is your gender?

☐ Male ☐ Female

4. What age bracket do you belong to?

☐ Below 30 years ☐ 31 to 40 years ☐ 41 to 50 years

☐ 51 to 60 years ☐ Over 60 years

5. How long have you worked for this company?

.....

6. How long has this insurance company been in operation?

.....

PART B

FACTORS INFLUENCING UNDERWRITING INSURANCE ON PSVs (MATATUS)

7a) Does this company offer insurance covers to vehicles plying for hire (*matatus)?*

☐ Yes ☐ No

If no, kindly proceed with part c and d

7b)* ***If yes continue with part b and d****

What type of cover do you provide in underwriting insurance on vehicles plying for hire?

☐ Individual Matatu ☐ Fleet Risk ☐ Both

7c) Please indicate the extent to which your firm underwrites the aforementioned covers. Where;

1= Not at all 2= Small extent 3= Some extent 4= Moderate extent 5=Great extent

Matatu Risk	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Fleet Risk	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

7d) What risks does the PSV (matatu) policy cover?

☐ Third Party Risk ☐ Third Party,fire & theft ☐ Comprehensive

Others .....

7e) Please indicate the extent to which your firm covers the above.

Where;

1= Not at all 2= Small extent 3= Some extent 4= Moderate extent 5=Great extent

Third Party Risk	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Third Party, Fire & Theft ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Comprehensive ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Insurance Industry Factors

8. Rate the importance of the following insurance industry factors in influencing underwriting insurance on PSVs *(matatus)*

Where;

1= Not important 2= Slightly important 3= Important 4=Fairly important 5= Very important

Usage of vehicle ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Area of operation ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Vehicle seating capacity ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Type of cover (TPO,TPO& T) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Driver details(age, experience..) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Manufacturer log book vehicle details (Year, type)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Level of fraud in the industry

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Level of competition (undercutting)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Vibrant agents/brokers

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Strong internal controls in the insurance firm

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others (specify)

.....

.....

.....

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.....

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.....

.....

Regulations and reforms in the transport and insurance sectors.

9**.** Rate the importance of the following regulations and reforms in influencing underwriting insurance on PSVs (matatus) Where;

1= Not important 2= Slightly important 3= Important 4=Fairly important 5= Very important

Introduction of PSV SACCOs

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Mandatory third party insurance

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Anti-fraud systems

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Stringent traffic rules (speed limits.)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Maximum limit of third party liability

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Existence of a regulatory body

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others (specify)

.....

.....

.....

.....

.....

.....

Shareholders' Interests

10. Rate the importance of the following shareholders (investors) interests in influencing underwriting insurance on PSVs (matatus)

Where;

1= Not important 2= Slightly important 3= Important 4=Fairly important 5= Very important

Ready business (mandatory 3rd party insurance)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Risk taking nature of the shareholders

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Diversification of risks

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Maximisation of profits

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Enhanced corporate governance through a regulator

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others (specify)

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PART C

FACTORS INHIBITING UNDERWRITING OF INSURANCE ON PSVs (MATATUS) IN KENYA

11a) If you do not underwrite insurance on PSVs, briefly explain why you dropped the product.

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11b) Do you underwriter insurance on the following classes of PSVs?

i. Private hire-chauffer driven i.e taxis, ubers ☐ Yes ☐ No

ii. Private hire self-driven ☐ Yes ☐ No

iii. Tour vans ☐ Yes ☐ No

11c) If you have ticked yes to any of the above please state why these are your preferred classes to insure.

.....

.....

.....

Insurance Industry Factors

12. To what extent do the following factors **PREVENT** this firm from underwriting insurance on PSVs. Where;

1= Not at all 2= Small extent 3= Some extent 4=Moderate extent 5= Great extent

Fraudulent claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Amount of damages awarded by courts in case of claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Enforcement of traffic rules

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Experience and competence of psv (matatu) driver

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Competition in the industry

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Condition of the vehicles

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Insurance Premiums by the vehicle owners

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others

.....

.....

.....

Regulations and Reforms in the Transport and Insurance Sectors.

13. To what extent do the following regulations and reforms **PREVENT** this firm from underwriting insurance on PSVs (matatus)? Where;

1= Not at all 2= Small extent 3= Some extent 4=Moderate extent 5= Great extent

Fraudulent claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Fixed/ restricted passenger capacity

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Mandatory Insurance cover

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Stringent traffic control (safety belts, speed limits)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Controlled insurance premiums

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Public service vehicles inspection

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Integrity requirement for vehicle crew (good conduct)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

The proposed bus rapid transport system

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Introduction of NTSA

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Establishment and existence of Traffic Police Department

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Third Party Risk

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Mandatory PSV saccos/ companies

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others

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.....

.....

Shareholder's Interests

14. To what extent do the following shareholders' interests **PREVENT** this firm from underwriting insurance on PSVs (matatus)? Where;

1= Not at all 2= Small extent 3= Some extent 4=Moderate extent 5= Great extent

Fraudulent claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Risk aspect of the product (PSV insurance)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Reduced profits due to high insurance claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Nature of the shareholders

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Risk attitudes of the investors

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Solvency and liquidity constraints facing the firm currently

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

No longer interested in this product (PSV underwriting)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

15. Kindly state other reasons(not specified above) that have made this firm shy away from underwriting PSV(matatu) insurance.

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PART D

<u>WAYS/MECHANISMS TO INCREASE/ ENHANCE UNDERWRITING INSURANCE ON PSV (*MATATU*)</u>

16. **Industry related mechanisms**

State the extent you agree with the following on enhancing PSV (*matatu)* insurance underwriting

1= strongly disagree, 2= disagree, 3= neutral 4= agree 5= strongly agree

Centralized motor insurance data systems

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Creation of mutual insurance companies

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Strong internal controls in insurance firms

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Mergers of PSV insurance underwriters

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Withdrawal of 14 seater vehicles

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others (specify)

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.....

17. **Regulated Related mechanisms**

State the extent you agree with the following on enhancing PSV (*matatu)* insurance underwriting

1= strongly disagree, 2= disagree, 3= neutral 4= agree 5= strongly agree

Withdrawal and Non registration of 14 seater PSVs

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Tighter Anti-fraud systems

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Restricted limit of number of years of operating as PSV(to curb un-roadworthy vehicles)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Restricted access of PSVs to town centres

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Existence of special court for insurance claims

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

NTSA overseeing the PSV sector

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Tighter requirements on matatu crew(age, education, refresher courses, Basic mechanic skills etc)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Standardised body works on matatus

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Tighter/ stiff penalties on traffic offence for matatu crew

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Introduction of BRT(bus rapid transit system)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Others

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THANK YOU!

Appendix III: Research Authorization Letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/43814/27444** Date: **24th January, 2019**

Joseph Njogu Mungai
Strathmore University
P.O. Box 59857- 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Determinants of low uptake of insurance underwriting on public service plying for hire in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **24th January, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix IV: NACOSTI Research Permit

THIS IS TO CERTIFY THAT:
MR. JOSEPH NJOGU MUNGAI
of STRATHMORE UNIVERSITY, 574-902
KIKUYU,has been permitted to conduct
research in *Nairobi County*

on the topic: *DETERMINANTS OF LOW UPTAKE OF INSURANCE UNDERWRITING ON PUBLIC SERVICE PLYING FOR HIRE IN KENYA*

for the period ending:
24th January,2020

Permit No : NACOSTI/P/19/43814/27444
Date Of Issue : 24th January,2019
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 22806

CONDITIONS: see back page

Appendix V: List of Insurance Companies Regulated by IRA

1. AAR Insurance Company limited
2. APA Life Insurance
3. Barclays Iife Insurance
4. Britam Iife Assurance
5. Cannon Assurance Company
6. CAPEX Life Assurance Company
7. CIC Life Assurance
8. GA Life Assurance Limited
9. ICEA Lion Life Assurance
10. Kenya Oorient Life Assurance
11. Liberty Life Assurance
12. Madison Insurance Company Kenya
13. Prudential Life Assurance
14. Sanlam Life Insurance Company
15. UAP Life Insurance
16. African Merchant Assurance Company
17. AIG Kenya Insurance
18. Allianz Insurance Company of Kenya
19. APA Insurance
20. Britam General Assurance
21. CIC General Assurance
22. Corporate Insurance Company Limited
23. Directline Assurance
24. Fidelity Shield Insurance
25. First Assurance
26. GA Insurance
27. Geminia Insurance Company Limited
28. ICEA Lion General Insurance
29. Intra Africa Assurance
30. Invesco Assurance
31. Kenindia Assurance
32. Kenya Orient Insurance co
33. Madison General Insurance kenya limited
34. Mayfair Insurance
35. Metropolitan Cannon Life Assurance limited
36. Occidental Insurance
37. Old mutual Assurance co
38. Pacis Insurance co
39. Pheonix of East Africa Assurance

40. Pioneer General Insurance Company
41. Pioneer Assurance Company
42. Resolution Insurance
43. Saham Assurance
44. Sanlam General Insurance
45. Takaful Insurance of Africa
46. Tausi Assurance
47. The Heritage Insurance Company
48. The Jubilee Insurance
49. The Kenyan Alliance Insurance co
50. The Monarch Insurance
51. Trident Insurance
52. UAP Insurance co
53. Xplico Insurance Company

Source: IRA (2018)

Appendix VI: PCA Results

	eigenvalue	variance.percent	cumulative.variance.percent
Dim.1	3.86887579	25.7925053	25.79251
Dim.2	2.16039529	14.4026353	40.19514
Dim.3	1.96923940	13.1282627	53.32340
Dim.4	1.58805475	10.5870317	63.91043
Dim.5	1.18457106	7.8971404	71.80758
Dim.6	1.02884248	6.8589498	78.66653
Dim.7	0.81263545	5.4175697	84.08409
Dim.8	0.64447541	4.2965027	88.38060
Dim.9	0.55214460	3.6809640	92.06156
Dim.10	0.34857718	2.3238479	94.38541
Dim.11	0.26557915	1.7705277	96.15594
Dim.12	0.20078626	1.3385750	97.49451
Dim.13	0.18823992	1.2549328	98.74944
Dim.14	0.09791150	0.6527433	99.40219
Dim.15	0.08967176	0.5978117	100.00000