

Effects of Risk Perception on the Demand for Insurance: Implications on Nigerian Road Users

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Abstract

Nigerian motorists perceive motor risks differently, thus, the demand for insurance is expected to be motivated by how risk is perceived. Risk perception therefore is the process by which an individual organizes and selects a product with distinct characteristics which can either be intrinsic or extrinsic. This paper examines the implication of the level demand of comprehensive motor insurance among Nigerian motorists. Cross sectional survey research method was adopted for the study and Three Hundred and Five (305) respondents including commercial drivers in international motor parks in Lagos State were randomly selected. Data procedures were done using descriptive statistics and Pearson's correlation coefficient. Findings revealed that price, income and religion belief affect risk perception of Nigerian motorists.

Keywords: risk, risk perception, insurance, motor insurance, motor insurance pricing, demand for insurance.

INTRODUCTION

The word risk is a household name that one has been living with. Individuals and businesses are exposed to different types of risks. This is because risk is not only the centre of insurance but also inseparable from life. Risk is defined in its simplest form as uncertainty of loss. Risk is therefore evaluated as the deviation of future outcome from the expected or predicted values. The importance of risk in ones life has led to its different perception by different sections in life.

Risk perception has a great impact on the demand for motor insurance, particularly compulsory insurance policies. However, demand for motor insurance is dependent on perception of some hazards which determine valuation of motor risks. These perceived risks can be financial, psychological, performance or time risks. This had led to some people to understand risk as if no hazard exists while other rate a low-probability risk which equal to more frequent exposure. Moreover, laws of each country also influence how road users perceive risk and its subsequent demand.

STATEMENT OF THE PROBLEM

Driving in Nigeria on Nigerian roads can not be described as pleasant experience particularly when compared to driving habit in other countries. This may be attributable to what motor insurance covers in terms of vicarious liability. The current third party liability insurance does not require that the drivers' risk factors are covered. This is why an insurance approach to managing drivers' risk may change the driving habit.

OBJECTIVE OF THE STUDY

The main objective of this study is to find out if there is any correlation between how Nigerian road users perceive motor risks and its subsequent demand for motor insurance and also to find out if motor insurance pricing affects risk perception of Nigerian motorists.

HYPOTHESES

- (i) Perception of Nigerian motorists does not affect the demand for comprehensive motor insurance.
- (ii) Price of motor insurance does not affect risk perception of Nigerian motorists.

LITERATURE REVIEW

Risk theory is the likelihood to experience catastrophic or economic loss which can be physical, emotional harm of any kind. Dake (1991) defines risk as the variation in possible outcomes of an event based on chance. This aligns with Vaughan & Vaughan (1996) who defined risk as a condition in which there is a possibility of an adverse deviation from a desired outcome that is expected or hoped for. The above definitions centre on the premise that individual's generally attempts to avoid incurring risk through developing various "risk-reducing" strategies in various areas of lives. Hence, risk can be described as being multidimensional (Sitkin and Weignart, 1995).

Risk perception on the other hand is the process by which an individual selects, organizes and interprets stimuli into a meaningful and coherent picture of the

world (Burn, 1992). However, from a social point of view, Wildavsky (1991) defines risk perception as conceptualized as a contraction process which can be through different forms, like consumers' self image, positioning of services, service environment and perceived quality of products which can either be intrinsic that is physical characteristics of the product itself or extrinsic like pricing, advertising and so on. This definition suits the Nigerian motorists whose perception may be affected by poor driving attitude, negligence and insurance premium.

Basically, Douglas and Wildavsky (1983) and Slovic (2000) proposed different approaches toward risk perception. While Slovic (2000) concentrated on psychometric paradigm, Douglas & Wildavsky (1983) proposed cultural approach. The psychometric concentrates on various characteristics or risk dimensions to explain sometimes "irrational" perception of laypersons. The major aim of this approach was the unveiling of the cognitive structure of risk. It is believed that people's perception of risk of various sources are related to the factor dread and unknown risks.

On the other hand, cultural theory places affiliation with social ways of life and corresponding worldviews in the center of their theoretical concept of risk perception hierarchism fears attach in social order e.g. crime, individualist is afraid of regulation e.g. market interventions by the state. The egalitarian worries about environmental risk and fatalist is scared of almost everything in social life. (Douglas and Wildavsky, 1993)

Several factors that may influence how risks are being perceived, some of which are; (i) characteristics of the risk source itself (Slovic, 2000), (ii) value attitude (Dake, 1991), (iii) ethic-cultural & socio economic background (Vaughan & Vaughan 1996) and (iv) level of information.

Motor Insurance

Road transportation is one of the common means of commutation; hence it has embedded morbidity and mortality risks in most countries (Blincoe, 1996). Due to this motor vehicle insurance has developed into an important form of contract arising out of or in connection with the use of motor vehicles including third party. Motor insurance policy may also be affected to provide cover against loss or damage to the third party arising from the use of a vehicle, (Falegan, 1991).

The invention of the automobile in the late nineteenth century created a need to protect motorists from the potentially enormous financial loss from operating a car. Though the use automobile certainly revolutionized the Nigerian society both economically and culturally, it can also be a

dangerous instrument, inflicting death, personal injury, and property damage to third party, drivers and the automobile itself can also be damaged or stolen.

However, with the knowledge that operating an automobile which may be potentially economically devastating, and acting on the assumption that driving an automobile is a privilege and not a right, policy makers required motorists to purchase motor insurance coverage to protect innocent third parties as well as the at-fault motorist from liability. Hence, first motor insurance policy came into existence on February 1, 1898, courtesy of the Travelers Insurance Company (Rossi, John & Black, Jr., 2001).

Chen et al (2000) posit that risks which road users are exposed to can be:

- The cost of repairing the vehicle following an accident
- The cost of purchasing a new vehicle if it is stolen or damaged beyond economic repair.
- Legal Liability claims against the driver or owner of the vehicle following the vehicle causing damage or injury to a third party.

Different types of policy under motor insurance according Graham W. (2002) are; Act only policy, third party only policy, third party fire and theft policy and comprehensive policy which includes liability. Important legislations related to motor insurance and road users in Nigeria are;

- Motor vehicles (third party insurance) Act 1945.
- Road Traffic Act 1972 / 1974

Motor vehicles (third party insurance) Act, 1945 which commenced on 1st of April, 1950 has 23 sections but section 3 talks about insurance against the third party by the vehicle owner. Section 43 of Road traffic act talks about the liability of third party by drivers which can either be vehicle owner or drivers because vehicle owner may not necessarily be the driver.

The sharp difference in these two acts creates different perception between commercial drivers who may not be the owner of the vehicle and vehicle owner. Third party liability insurance is passed to the vehicle owner and not the drivers especially the commercial drivers who most times are reckless. Hence, private vehicle owners exhibit high level of duty of care compared to the commercial drivers.

Demand for Motor Insurance

The theory of demand for insurance has been based on expected utility theory and an assured preference for certain issues over uncertain ones of the same magnitude (Savage, 1972). Demand for insurance is a decision to purchase not only the apparent current condition of product but also its future conditions Dionne, G. D. (2000). With the purchase of insurance

services, Blincoe (1996) asserts that a consumer widens its economic scope of discretion and opportunity by protecting themselves from financial loss in the event of accident or theft. Therefore, the price of insurance is an essential determinant in the level of insurance demand (Swiss Re, 1993).

However, the relationship between alternatives prices on the current demand will determine the demand curve. That is demand and prices are inversely related; the higher the price, the lower the demand (Anderson et al., 1993). Therefore, before an insurance company could set a price on its services it has to consider some factors. These factors according to Michael M. V. & Robert L.R (1992) are; selecting the pricing objective, determining the level of demand, estimating the costs, analyzing competitor's cost price and others and selecting a pricing method. In their submission, Nagle & Holden (2001) believe that most insurance pricing are associated with lower price sensitivity, this they further stated is not unconnected to the following factors;

- Distinctiveness of the insurance service.
- Buyer or insuring public less awareness of substitutes
- The service cannot be stored
- The product or service is used in conjunction with assets previously bought
- Part of the cost might be borne by another party
- The expenditure is a smaller part of the buyer's total income
- Buyers cannot easily compare the quality of substitutes.

From the aforementioned, individual decisions on whether to purchase insurance products are largely determined by the characteristics of individual risk aversion, expectation regarding the likelihood of loss through theft or accident and the price of insurance products (Dionne, Georges, Neil & Nathalic, 2000). Numerous empirical studies linked risk perception to demand for insurance. Mc Clelland, Shulze & Hund (1990) assert that some people are found to perceive risk as if no hazard exists while others rate a low probability risk equal to more frequent risk exposure, as a matter of perception. Solvic (2000) and Kunreuther (1978) postulated that people do not believe that accident can happen to them unless the probability of occurrence is above a certain level. Therefore, individuals according to Camerer (1989) resorted to having self-insurance or protection. Self-insurance is a way of mitigation for cases when human actions cannot affect the probability of risk but can influence the consequences of the risk. They proposed three scenarios for the commercial and private road users.

- Individual drivers have some control over the consequence of road hazards but not over its underlying probability.

- Mitigation measures (Willingness-to-pay) are defined as actions that reduce the damage from disaster.
- The insurance market is assumed to be unavailable.

Motor Insurance Pricing

In standard economic theory, the price of a product is the key determinant in the supply and demand of that product (Varian, 1999). There are various ways of determining the pricing system of motor insurance, the predominant systems are actuarial or risk based pricing and social pricing (Swiss Re, 1993). Social pricing of motor insurance can be described as a symmetric learning model with a pooling equilibrium, where some characteristics of the insured's risks are ignored. Angus and Chenard (1998) believe that social pricing involves the pricing of insurance to the risk profile of the insured community. Such pricing system uses environmental factors such as geography, climate, vehicle type and use, and traffic congestion but excludes factors like gender and marital status. Social pricing is common in Great Britain's and its Colonies, Columbia etc. Since, the insurers do not differentiate by level of risk (by age and gender), it must offer everyone the same price relating to the average risk. At that price, insurance is expensive to low risk drivers and a bargain to high-risk drivers, paying the same average insurance premium as a low risk under a social pricing regime, does not pay the full cost associated with their risky behavior (Dionne, 2000).

Actuarial pricing according to Derry (1999) involves the pricing of insurance to the individual risk profile of the insured. Under an actuarial system, factors such as geography, climate, type and use of vehicle, insurance claims record, other driver in the household who use the vehicle, driver's age, driving record, driver's gender and traffic congestion which affect the frequency, and cost of accident and theft are used to price the insurance product. Angus & Albert (1998) posit that actuarial risk pricing attempts to have the price of insurance product reflects the risk associated with the insured. It involves separating equilibrium where drivers of the same geographic region and vehicle type of different risk types pay insurance premiums reflecting their level of risk Dionne (2000). Risk-based rating by the statistically meaningful characteristic is an important factor in reducing adverse selection of motor insurance (Ferguson, 1996).

Motor insurance practice in Nigeria adopts the Motor Insurance Act, 1945 requiring third party liability cover as the minimum that could be purchased. Although, this Act covers liabilities arising from the use of the car, but the driver's risk perception is such that he drives without having any sense of obligation to reduce risk to other road users because of its

indifferent attitude to the existence of insurance. In the United States, for example, there is different cover for the driver who may not be the owner of the vehicle. This practice is conjectured by this paper to have impact on risk perception on one hand, and demand of insurance at the other end. Nigerian road users may begin to feel the impact of a driver's policy concept, particularly if it is required that a driver's license can only be procured on obtaining a driver's insurance policy. This is a where actuarial pricing might be useful to make the demand (price) in line with risk perceptions of Nigerian motor drivers.

METHODOLOGY

Instrumentation, Sources and Data Description

The target population comprises commercial road users in Lagos state. Iyana –Iba motor park (Ojo Local Government Area), Maza-maza and Mile 2 motor parks (Amuwo-odofin Local Government Area) were selected for the studies. The choice of these areas is due to the fact that there is lot of vehicular movement because of its link to West African export route. The data for this study were collected through the administration of structured interview of using stratified random sampling.

Three hundred and five drivers were interviewed. The explanatory variables examined in this study are motor risks, risk perception of commercial and private drivers that result in the demand for motor insurance. The questions were tailored along a three-likert scale. The responses were coded and mapped into numeric values; for example, considering the extent of risk, risk perception and for demand for motor insurance in Nigeria, the following mapping exists; Yes = 3, No = 2, and I do not know = 1

Correlation analysis was carried out on the coded data to determine the relationship between risk perception and demand for insurance. Bivariate correlation procedures using Statistical Package for Social Sciences (SPSS) were employed in computing the Pearson's correlation coefficient. The correlation coefficient expressed the strength of the relationship on a scale, ranging from -1 to +1. A positive value close to +1 indicates a strong positive relationship, in which an increase in one variable implies an increase in the value of the second variables, while a strong negative relationship (close to -1) indicates that an increase in one variable leads to a decrease in the other. The extent of correlation is considered at 0.01level of significance. Descriptive statistics were also produced to show the extent of practice of risk perception and demand for insurance.

DATA ANALYSIS, RESULTS AND DISCUSSIONS

For the purpose of data analysis, simple descriptive analysis and percentages were used. Moreover, an

adapted version of summated rating technique was applied.

Table 1: Respondents' opinion on relationship between perception of vehicle drivers and demand for insurance

Response Option	Frequency	Percentage
YES	255	83%
NO	30	10%
I DON'T KNOW	20	7%
TOTAL	305	100%

Source: Questionnaire

The above data indicates that 83% of the respondents agreed that there is a significant relationship between drivers' perception and demand for insurance in Nigeria, while 17% of the respondents show contrary opinion. This implies that if separate drivers' insurance is introduced, there is tendency that the rate of accident on Nigeria may be reduced.

Table 2: Respondents' opinion on whether price of motor insurance affects risk perception of Nigerian motorists.

Response Option	Frequency	Percentage
YES	251	82%
NO	43	14%
I DON'T KNOW	11	4%
TOTAL	305	100%

Source: Interview

From the above table, 82% of the respondents were of the opinion that price of motor insurance (premium) influences perception of Nigerian motorists, while 18% expressed a contrary view. Therefore, premium can be reviewed using actuarial pricing system which makes reckless drivers to pay more and careful drivers to pay less through pooling of risk.

Test of Hypotheses

Hypothesis One

Table 3: Correlations

		RISK PERCEPTION	DEMAND FOR INSURANCE
RISK PERCEPTION	Pearson Correlation	1	.963**
	Sig. (2-tailed)		.008
	N	305	305
DEMAND FOR INSURANCE	Pearson Correlation	.963**	1
	Sig. (2-tailed)	.008	
	N	305	305

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

The analysis above shows the Pearson correlation coefficient of the relationship between risk perception and rate of demand for motor insurance in Nigeria. The Pearson's correlation coefficient is 0.963 at 5% level of significance. Therefore, there is a positive

and significant relationship. This means that if there is mass awareness to changing the driving culture of commercial drivers, demand of insurance will greatly increase.

Hypothesis Two Correlations

Pricing of motor insurance and Risk perception
Table Four

	PRICE OF MOTOR INSURANCE	RISK PERCEPTION OF NIGERIAN MOTORISTS
PRICE OF MOTOR INSURANCE	1	.983**
Pearson Correlation		.003
Sig. (2-tailed)		
N	305	305
RISK PERCEPTION OF NIGERIAN MOTORISTS	.983**	1
Pearson Correlation	.003	
Sig. (2-tailed)		
N	305	305

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

In table 4 above, the correlation coefficient is 0.983 at 0.05 level of significant. This indicates that there is significant relationship between price of motor insurance (premium) and risk perception of Nigerian motorists. A pragmatic management of the premium system would improve and increase the appetite of the citizenry for insurance products.

CONCLUSION AND RECOMMENDATIONS

Anecdotal evidence shows that Nigerian motorists and commuters face hazards and motor risks on Nigerian roads based on risk perception of motor drivers. This paper under pines this intuition that greater risks occur risk occur due to the fact that drivers are not separately covered by liability insurance which tends to induce their perceptibility of obligations to other road users. The pricing of motor insurance to a good extent affects the demand for comprehensive insurance and this dove tail into higher motor risks in Nigerian roads.

RECOMMENDATIONS

Insurance manages risks so that the insured individuals could have confidence in risk taking or reduce risk aversion. Despite motor insurance, and Lagos state road traffic Act 1999 road users in Lagos and Nigeria in general continue to experience unpleasant motoring culture. We therefore, suggest the following:

- A consideration of separate liability insurance for all Nigeria motor drivers separate from the motor insurance policy for owners.
- Specifically, for commercial motor vehicles, separate insurance cover should be undertaken

for every passenger who overtly sustains losses from the reckless of the vehicle drivers.

These two recommendations above would necessitate the amendment of the existing third party motor insurance Act of 1945.

- Insurance companies should commence the assessment of individual insurance score to rate drivers for payment of premium.
- A mass awareness campaign on the compliance of Lagos road traffic act of 1999 be adopted as national approach to improving driving culture on Nigerian roads.
- Comprehensive policy should be deregulated to reflect actuarial pricing.

REFERENCES

Anderson, J. C., Jain D. C. & Chintagunta P. K. 1993. Customer value assessment in business markets. A state – of – practice study. Journal of Business – to – Business Marketing, (1) 3-28.

Angus, D. E., Shariatmader 1998. The Economic burden of Unintentional injury in Canada. Smartrisk.

Blincoe, L., 1996. The Economic Costs of Motor Vehicle Crashes. National Highway Traffic Safety Administration Washington D.C.

Brun, W., 1992. Cognitive components in risk perception natural versus man made risks, Journal of Behavioural Decision Making, 117-132.

Camerer C. F., 1989. An Experimental test of several generalized utility theories. Journal of Risk and Uncertainty 2 (61 – 104)

Chen, L. H., & Baker, S.P. 2000. Carrying passengers as risk factor for accidents fatal to 16- and 17 year old drivers. Jama 283 (12) 1578 -1582

Dake, K.,1991. Disposition in the perception of risk; an analysis of contemporary worldviews and cultural basis, Journal of Cross – Cultural Psychology.

Derry, H.A., 1999. Hazard and Risk perception and young novice drivers. Journal of Safety Research, 30, (4) 225-236.

Dionne, G. D., 2000. Adverse selection in insurance market. Handbook of Insurance. London.

Douglas, M. and A. Wildavsky, 1983. Risk and Culture.

Falegan, J. 1991. Insurance an introductory text. University of Lagos Press. Lagos.

- Ferguson, C. C. 1996. Assessing human health risk from exposure to contaminated land: A review of recent research. *Land Contamination and Reclamation*, pp 159 - 170
- Graham, W., 2002. Motor insurance underwriting and claims. Chartered Insurance Institute London.
- Irukwu, J. 1974. Insurance Law and practice in Nigeria. Caxton press, Akoka, Lagos. Lagos State Road Traffic Law of 1999.
- McClelland G.H., W.D. Schulze W.D. and B. Hurd, 1990. The effect of Risk Belief on Property values: A case study of Hazardous waste site, *Risk Analysis*. 10 (4) 485-497.
- Micheal M.V., & Robert L.R. 1992. Managing price, gaining profit. *Havard Business Review*. 70, 84 – 94.
- Motor Vehicles (Third Party Liability Insurance) Act 1945.
- Nagle T., and R.K. 2002. The Strategy and Tactics of Pricing. Prentice Hall Marketing Series, P.29
- Kunreuther, H., 1978. Disaster Insurance Protection, Public Policy lessons. New-York.
- Rossi, P and Black, Jr. 2001. Entrepreneurship and Innovation in Automobile Insurance. New York, NY: Routledge.
- Savage, L. J., 1972. The Foundation of Statistics, New York: Dover Publication.
- Slovic, P., 2000. The perception of risk. London/ Sterling.
- Sitkin S.B., & L. R. Weingart 1995. Determinants of Risk decision behavior: A test of the mediating role of risk perception and propensity. *Academy of Management Journal*, 38, 1573-1592.
- Swiss Re, 1993. The effects of price adjustments on insurance demand. *Sigma*, No. 5/1993, Swiss Re Economic Studies.
- Swiss Re, 2001. Profitability of non- life insurance industry; its back to basic time. Swiss Re economic research and consulting, *Sigma* No.5/2001,.
- Varian, H. 1999, *Intermediate Microeconomics. A modern approach*, 5th ed. New York.
- Vaughan & Vaughan 1996. Fundamentals of risk and insurance. Library of Congress cataloging in publication data. John Willey & Sons Inc. United States of America.
- Wildavsky, A. 1991. The rise of Radical egalitarianism. The American University Press