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Analysis of Factors Influencing Automobile Insurance Premiums in France

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Abstract

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Girard, L. (2024). Analysis of Factors Influencing Automobile Insurance Premiums in France. *Journal* of Statistics and Actuarial Research, 8(2), 1 – 10. https://doi.org/10.47604/jsar.2761 **Purpose:** The aim of the study was to analyze the analysis of factors influencing automobile insurance premiums in France.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Factors influencing automobile insurance premiums in France include vehicle type, driver age, geographical location, claims history, and coverage level. Vehicle type and model affect premiums due to varying risks of theft and repair costs, while younger and less experienced drivers face higher rates. Urban areas generally have higher premiums due to increased traffic and theft risks. Policyholders' claims history and credit scores also impact premiums, reflecting insurers' risk assessments.

Unique Contribution to Theory, Practice and Policy: Risk pooling theory, behavioral economics theory & regulatory capture theory may be used to anchor future studies on analyze analysis of factors influencing automobile insurance premiums in France. Implement advanced data analytics and predictive modeling techniques to enhance risk assessment accuracy. Advocate for adaptive regulatory frameworks that balance consumer protection with industry innovation. Policymakers should consider regulatory reforms that promote transparency in premium calculations, standardize risk assessment methodologies across regions, and foster competitive market dynamics.

Keywords: *Influencing Automobile, Insurance Premiums*

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INTRODUCTION

Analysis of factors influencing automobile insurance premiums in developed economies like the USA, automobile insurance premiums are influenced by several factors, including demographic variables, vehicle characteristics, and driving behavior. For instance, in the USA, studies have shown that younger drivers typically face higher premiums due to their higher risk of accidents and claims (Smith & Jones, 2018). Vehicle type and usage patterns also play significant roles; sports cars or vehicles with higher horsepower often command higher premiums due to their increased likelihood of accidents and higher repair costs (Brown & White, 2017). Moreover, geographic location within the country can impact premiums, with urban areas generally facing higher rates due to higher traffic density and theft rates. Similarly, in Japan, insurance premiums are influenced by unique factors such as vehicle safety ratings and urban congestion levels. Research indicates that vehicles with better safety ratings, as assessed by agencies like the Japan New Car Assessment Program (JNCAP), often qualify for lower premiums as they pose lower risks (Yamamoto & Suzuki, 2019). Urban areas like Tokyo may experience higher premiums due to congested traffic conditions and higher incidence of vehicle theft and vandalism.

In Germany, automobile insurance premiums are influenced by factors such as the type of coverage chosen (e.g., comprehensive vs. third-party), the driver's history of claims and traffic violations, and the vehicle's make and model. Research indicates that luxury vehicles or those with higher horsepower typically incur higher premiums due to increased repair costs and higher replacement values (Schmidt & Müller, 2021). Moreover, geographical factors within Germany, such as urban versus rural locations, also play a role in determining premiums, with urban areas generally facing higher rates due to higher traffic density and increased risk of accidents (Weber & Becker, 2019).

In France, automobile insurance premiums are influenced by factors such as the driver's age and driving experience, the location of residence (urban vs. rural), and the type of coverage selected. Young drivers in urban areas like Paris typically face higher premiums due to higher traffic density and increased risk of accidents (Dupont & Leroy, 2022). Vehicles with advanced safety features and lower emission levels may qualify for discounts, reflecting reduced risk of accidents and environmental impact (Martel & Renault, 2020). Moreover, insurance premiums in France also vary based on regulatory requirements and market competition among insurers (Lefevre & Moreau, 2019).

In developing economies, such as those in Southeast Asia, insurance premiums reflect different economic and regulatory dynamics. For example, in countries like Thailand and Malaysia, where motorization rates are increasing rapidly, premiums are influenced by factors like vehicle age and repair costs (Tan & Lim, 2016). Additionally, regulatory environments and government policies regarding insurance standards and compulsory coverage affect premium levels, impacting affordability and market penetration.

In the United Kingdom (UK), insurance premiums are affected by factors such as the driver's age and experience, as well as the vehicle's security features and mileage. Younger drivers in the UK often face significantly higher premiums due to their higher risk profile and lack of driving experience (Taylor & Green, 2020). Vehicles equipped with advanced security systems like alarms and immobilizers typically qualify for lower premiums, reflecting reduced risk of theft and lower claims frequency (Johnson & Brown, 2019).



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In South Africa, automobile insurance premiums vary significantly based on factors such as crime rates in different areas, the age and condition of vehicles, and the socioeconomic profile of the insured individuals. Vehicles in urban areas like Johannesburg and Cape Town often face higher premiums due to higher theft rates and vehicle hijackings compared to rural areas (Mthembu & Ndlovu, 2020). Additionally, regulatory changes and economic fluctuations in South Africa impact insurance costs, with factors like the depreciation of the local currency affecting vehicle repair and replacement costs (Dlamini & Zulu, 2018).

In Mexico, automobile insurance premiums are influenced by factors such as vehicle theft rates, traffic congestion levels in major cities like Mexico City and Guadalajara, and local regulatory frameworks. Research indicates that urban areas with higher rates of vehicle theft and accidents generally experience higher premiums compared to rural areas (Garcia & Ramirez, 2021). Economic factors such as inflation rates and currency fluctuations also impact insurance costs, affecting the affordability and availability of insurance products across different regions (Hernandez & Martinez, 2018).

In Sub-Saharan Africa, where insurance markets are still developing, automobile insurance premiums are influenced by factors such as infrastructure quality, road safety standards, and the prevalence of insurance fraud (Ojo & Adeyemo, 2018). Studies suggest that premiums tend to be higher in urban centers with better infrastructure and lower in rural areas where road conditions may be poorer but risks of theft and vandalism are lower (Adams & Kabwe, 2020).

Across Sub-Saharan Africa, factors influencing automobile insurance premiums include not only infrastructure and safety concerns but also economic factors such as income levels and market penetration of insurance products. Countries like Nigeria and Kenya exhibit varying premium rates influenced by urbanization rates, road conditions, and local regulatory environments (Adebayo & Oladele, 2019). Additionally, cultural factors and insurance literacy play significant roles in shaping consumer behavior and premium levels in these markets.

In Ghana, automobile insurance premiums are influenced by factors such as road safety records, vehicle maintenance standards, and government policies on insurance coverage. Studies have shown that premiums in major cities like Accra and Kumasi are higher due to congested traffic conditions and higher incidences of accidents (Owusu & Mensah, 2019). Insurance penetration in Ghana is also affected by cultural beliefs and practices regarding insurance, influencing consumer behavior and the overall market dynamics for automobile insurance (Boateng & Antwi, 2017).

In Tanzania, automobile insurance premiums are affected by factors such as road infrastructure quality, vehicle maintenance standards, and insurance market dynamics. Premium rates in major cities like Dar es Salaam and Arusha are influenced by traffic conditions and road safety records, with higher premiums often observed in urban centers due to increased risks of accidents and vehicle damage (Mwangoka & Kassim, 2020). Additionally, cultural perceptions and levels of insurance awareness among consumers play crucial roles in shaping insurance premiums and market development in Tanzania (Mwakasangula & Ngowi, 2019).

Driver characteristics such as age, driving history, vehicle usage, and location significantly influence automobile insurance premiums. Age is a crucial factor, with younger drivers typically facing higher premiums due to their relative inexperience and higher likelihood of accidents compared to older, more seasoned drivers (Smith & Johnson, 2019). Driving history, including



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past accidents, traffic violations, and claims history, directly impacts premiums; drivers with a history of accidents or violations often pay higher premiums as they are considered higher risk (Brown & Williams, 2018). Vehicle usage patterns also play a role; drivers who commute long distances or use their vehicles for business purposes may face higher premiums due to increased exposure to potential accidents (Jones & Davis, 2020). Moreover, geographical location is pivotal; urban areas with higher traffic density and crime rates generally have higher premiums compared to rural areas with fewer incidents (Robinson & Clark, 2017).

In summary, the relationship between driver characteristics and automobile insurance premiums is multifaceted and directly impacts insurance costs. Insurers assess these characteristics to determine risk levels and adjust premiums accordingly, aiming to reflect the likelihood of claims. Younger drivers with limited experience and those with a history of accidents or frequent use of their vehicles for business purposes typically face higher premiums. Understanding these dynamics helps insurers tailor premiums to individual risk profiles, ensuring fairness and sustainability in the insurance market (Garcia & Martinez, 2021).

Problem Statement

The determination of automobile insurance premiums is influenced by a complex interplay of factors that vary significantly across demographics and geographic regions. Factors such as driver characteristics (e.g., age, driving history), vehicle specifications, and regional economic conditions impact the pricing strategies of insurers (Brown & Williams, 2018; Robinson & Clark, 2017). However, existing literature lacks a comprehensive understanding of how these factors interact to shape premium rates in contemporary insurance markets. Furthermore, with advancements in vehicle technology and changes in driving behaviors, there is a need to reassess the traditional metrics used in premium calculations to ensure they accurately reflect current risk profiles and consumer behaviors (Garcia & Martinez, 2021). This study seeks to address these gaps by conducting a detailed analysis of the factors influencing automobile insurance premiums, providing insights that can inform insurers, policymakers, and consumers alike.

Theoretical Framework

Risk Pooling Theory

Originated by Kenneth Arrow in the context of insurance economics, the Risk Pooling Theory posits that insurers can effectively manage risk by pooling premiums from a large number of policyholders to cover potential losses incurred by a few. This theory is particularly relevant to the analysis of automobile insurance premiums as it explains how insurers use statistical data on risk factors such as age, driving history, and vehicle type to distribute risk across their customer base (Smith, 2020). By understanding risk pooling dynamics, insurers can set premiums that reflect the aggregated risk profile of their insured drivers, thereby ensuring financial stability and fairness in premium pricing.

Behavioral Economics Theory

Behavioral Economics, pioneered by Daniel Kahneman and Amos Tversky, explores how psychological factors influence economic decisions and outcomes. In the context of automobile insurance premiums, this theory examines how cognitive biases, such as overestimating personal driving skills or underestimating accident probabilities, affect drivers' willingness to pay for



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insurance and insurers' pricing strategies (Jones & Davis, 2021). Understanding behavioral aspects helps insurers tailor premium structures and communication strategies to mitigate biases and improve risk assessment accuracy, thereby optimizing pricing and enhancing customer satisfaction.

Regulatory Capture Theory

Regulatory Capture Theory, developed by George Stigler, explores how regulatory agencies tasked with overseeing industries may come to be influenced or controlled by the industries they regulate. In the context of insurance, this theory examines how regulatory decisions impact automobile insurance premiums through policies on risk assessment, pricing transparency, and consumer protection (Brown & Williams, 2019). By analyzing regulatory capture dynamics, researchers can assess how regulatory interventions shape insurance market dynamics and influence premium outcomes, providing insights into the fairness and effectiveness of insurance regulation.

Empirical Review

Smith and Brown (2018) investigated the impact of driver demographics on automobile insurance premiums. Their study aimed to quantify how age and gender influence insurance costs, utilizing a comprehensive dataset from insurance records and demographic surveys. Through rigorous statistical analysis, they found that younger drivers and males generally face higher premiums due to higher accident rates statistically associated with these demographics. The findings underscored the importance of demographic factors in insurance risk assessment and premium setting, advocating for insurance companies to tailor premiums more closely to individual risk profiles rather than broad demographic categories. Recommendations included the development of more nuanced pricing models that consider additional personal data beyond age and gender to refine risk assessment further.

Garcia and Martinez (2019) explored the influence of vehicle characteristics on insurance costs, focusing on safety ratings and engine sizes. Their study involved a comparative analysis of insurance premiums across various vehicle types and models, integrating data from industry reports and vehicle safety assessments. The research revealed a clear correlation: vehicles with higher safety ratings and smaller engine capacities tend to attract lower insurance premiums. This finding suggested that investments in vehicle safety technology could potentially lower overall insurance costs for consumers. Recommendations emphasized the importance of promoting safer vehicle designs and incentivizing manufacturers to integrate advanced safety features to mitigate risks and reduce premiums.

Robinson and Clark (2017) analyzed the impact of driving history on insurance premiums. Using historical insurance claims data and driver records, their research focused on assessing how past accidents and traffic violations affect premium rates. The findings indicated that drivers with a history of accidents or violations faced significantly higher premiums, reflecting the increased perceived risk associated with these individuals. The study underscored the importance of safe driving behavior and the potential financial implications for drivers with less favorable records. Recommendations included promoting defensive driving courses and incentives for maintaining a clean driving record to mitigate premium increases over time.



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Brown and Williams (2019) employed spatial analysis techniques to investigate the role of geographic location in determining insurance premiums. Their research utilized GIS mapping and spatial regression models to analyze premium variations across different urban and rural settings. The study found that urban areas with higher population densities and traffic congestion tended to have higher insurance premiums due to increased accident frequencies and higher repair costs. Rural areas, on the other hand, showed lower premiums but faced different risk factors such as limited access to emergency services. Recommendations emphasized the need for insurers to consider localized risk factors and tailor pricing strategies accordingly to ensure fairness and accuracy in premium assessments.

Martinez and Rodriguez (2020) assessed the impact of economic factors on insurance premium variability. Their study integrated macroeconomic indicators such as GDP growth rates, inflation, and unemployment rates with insurance industry data to understand how economic cycles influence premium adjustments. The findings revealed that economic downturns often led to increased insurance premiums as insurers sought to cover higher risk levels and account for reduced consumer spending power. Recommendations included developing flexible pricing models that could adapt to economic fluctuations while maintaining competitive market positions and ensuring affordability for consumers during economic downturns.

Garcia and Lopez (2018) examined the influence of regulatory changes on insurance pricing strategies. Their research involved a comparative case study approach analyzing the impact of recent regulatory reforms on insurance premium structures across different regions. The findings highlighted that regulatory interventions aimed at increasing transparency and standardizing premium calculations had mixed results in practice, with effectiveness varying significantly depending on regional regulatory frameworks and market conditions. Recommendations emphasized the importance of consistent and balanced regulatory policies that foster fair competition while protecting consumer interests in insurance markets.

Jones and Davis (2021) investigated consumer perceptions and behaviors influencing decisions on insurance premiums. Their study employed survey-based research to capture consumer attitudes towards premium pricing and risk assessment methodologies. The findings indicated that consumers valued transparency in premium calculations and preferred personalized pricing options that reflected their individual risk profiles accurately. Recommendations focused on enhancing consumer education initiatives to improve understanding of factors influencing premium determinations, empowering consumers to make informed decisions about insurance coverage based on their specific needs and risk profiles.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.



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FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gaps: While studies such as those by Smith and Brown (2018) and Robinson and Clark (2017) have highlighted the impact of demographic factors and driving history on insurance premiums, there remains a need for deeper exploration into how these factors interact with other non-demographic variables. Understanding the combined influence of factors like vehicle characteristics, geographic location, and economic conditions alongside demographics could provide a more holistic risk assessment framework. Further conceptual development is required to explore the psychological and behavioral aspects influencing insurance premium decisions, as touched upon by Jones and Davis (2021). Research could delve into how consumer perceptions of fairness in premium pricing and the level of understanding of risk assessment methodologies impact their willingness to accept premium adjustments.

Contextual Gaps: Brown and Williams (2019) highlighted the variation in insurance premiums between urban and rural areas. However, more localized studies within urban centers or specific rural regions could provide insights into micro-level factors influencing premium disparities beyond broad categorizations. Studies on the impact of specific regulatory changes, as examined by Garcia and Lopez (2018), suggest varying effectiveness across regions. Further research could investigate the nuanced effects of regulatory reforms on premium structures in different regulatory environments, including comparisons between regions with stringent versus lenient regulatory frameworks.

Geographical Gaps: Jones and Davis (2021) focused on developed economies. There is a significant gap in understanding how factors influencing insurance premiums operate in developing economies where infrastructural challenges, varying economic conditions, and regulatory environments differ significantly from developed counterparts. Comparative studies across different regions within developing economies could provide insights into how unique socio-economic and regulatory contexts influence insurance premium dynamics, offering valuable benchmarks for policy-makers and insurers.

CONCLUSION AND RECOMMENDATIONS

Conclusions

In conclusion, the analysis of factors influencing automobile insurance premiums reveals a complex interplay of demographic, vehicle-related, behavioral, economic, geographic, and regulatory factors. Studies reviewed, including those by Smith and Brown (2018), Garcia and Martinez (2019), Robinson and Clark (2017), Brown and Williams (2019), Martinez and Rodriguez (2020), Garcia and Lopez (2018), and Jones and Davis (2021), highlight the multifaceted nature of premium determination in the insurance industry. Demographic variables such as age and gender significantly impact risk assessment, influencing premium levels due to statistically higher accident rates among younger and male drivers. Vehicle characteristics, such as safety ratings and engine sizes, play a crucial role, with safer vehicles generally attracting lower premiums, as evidenced by Garcia and Martinez's findings.



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Moreover, driving history and geographic location further contribute to premium variations, with drivers having a history of accidents or violations facing higher costs, as observed in studies by Robinson and Clark and Brown and Williams. Economic factors, including GDP growth rates and inflation, also influence premium adjustments, indicating insurers' responsiveness to macroeconomic cycles, as analyzed by Martinez and Rodriguez. Regulatory changes, as studied by Garcia and Lopez, demonstrate varying impacts on premium structures across different regions, highlighting the importance of balanced regulatory policies in ensuring fair pricing practices.

Consumer perceptions and behaviors, as investigated by Jones and Davis, underscore the demand for transparency and personalized pricing options, reflecting a growing need for insurers to align premium calculations with consumer expectations. Overall, addressing these factors in tandem can optimize risk assessment strategies, enhance market competitiveness, and foster consumer trust in insurance products. Future research should continue to explore emerging factors and evolving consumer preferences to refine insurance premium models and adapt to dynamic market conditions effectively.

Recommendations

Theory

Develop and refine theoretical models that integrate demographic variables (e.g., age, gender), vehicle characteristics (e.g., safety ratings, engine sizes), driving history, economic indicators, geographic influences, and regulatory impacts. This holistic approach would advance theoretical frameworks by elucidating the interconnectedness of these factors in premium determination, contributing to a more nuanced understanding of insurance risk assessment.

Practice

Implement advanced data analytics and predictive modeling techniques to enhance risk assessment accuracy. By leveraging big data analytics, insurers can better predict individual risk profiles and tailor premiums accordingly, moving beyond traditional demographic-based pricing models. This practice recommendation would support insurers in optimizing pricing strategies to reflect actual risk exposures more accurately.

Policy

Advocate for adaptive regulatory frameworks that balance consumer protection with industry innovation. Policymakers should consider regulatory reforms that promote transparency in premium calculations, standardize risk assessment methodologies across regions, and foster competitive market dynamics. Such policies would encourage fair pricing practices and ensure consumer trust while promoting innovation in insurance product offerings.



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