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# Grizzly Insurance

 Z-FLOOD Analysis

by Zesty.AI

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## Abstract

Zesty.Ai’s innovative flood assessment tool, Z-FLOOD, aimed at assisting insurance companies in comprehending the flood-related risks associated with each property under consideration for insurance coverage. Z-FLOOD has demonstrated remarkable predictive capabilities, enabling the establishment of two critical risk metrics:

1. **Flood Occurrence Score:** This metric quantifies the probability of a property being susceptible to flooding, with scores ranging from 1 (indicating minimal risk, such as properties atop mountains) to 10 (reflecting significant risk, such as those situated adjacent to rivers).
2. **Flood Damage Score:** Z-FLOOD also assigns a score to assess the potential damage a home might experience in the event of a flood. Scores range from 1 (indicating low risk, such as homes elevated on pillars) to 10 (representing high risk, such as residences with deep basements).

Grizzly Insurance, a potential client of Zesty.ai, has collaborated with our organization by sharing their insurance policy portfolio for testing Z-FLOOD's effectiveness. Z-FLOOD was utilized to evaluate all policies within Grizzly Insurance's portfolio providing comprehensive flood risk assessments.

As Grizzly Insurance considers the adoption of Z-FLOOD, this analysis endeavors to illuminate the potential value and benefits that the tool could offer. Through careful examination and quantification, the following aspects will be addressed:

* The transformation of Grizzly Insurance's existing portfolio with the incorporation of Z-FLOOD.
* The multifaceted advantages that Grizzly Insurance stands to gain from integrating Z-FLOOD into their operations.
* A meticulous exploration and quantification of the positive impact that Z-FLOOD could have on Grizzly's profitability and overall financial performance.
* Strong case for Grizzly insurance to adopt Z-FLOOD software in its operations.

This analysis aims to provide Grizzly Insurance with a comprehensive understanding of the tangible benefits and potential outcomes associated with adopting Z-FLOOD, ultimately guiding their decision-making process and contributing to their risk assessment and underwriting strategies.

## Grizzly Insurance Portfolio Analysis and Impact of Z-FLOOD

**Grizzly Insurance Portfolio Stats:**

Properties Insured = 173,979

Net Insured Value= $88,202,144,840 (approx. 88 billion)

Average Insured Value= $506,973

Net Annual Premium= $209,933,678 (approx. 209 million)

Average Annual Premium= $1,207

Average Insured Claim Value (20%) = $101,395

Average Premium to Average Claim Ration = 0.01121

Average Premium to Insured Value Ration = 0.00224

Note:

* We do not have geographical data of the properties to have further geotagged analysis of the portfolio.

**Grizzly Insurance Portfolio with Z-FLOOD:**

Flood Occurrence Score = 3.81

Flood Damage Score = 6.75

Net Risk Score (Occurrence Score x Damage Score) = 28.01

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *Flood occurrence score* | *Flood damage score* | *Insured value* | *Policy Annual Premium* |
| Flood occurrence score | 1 |  |  |  |
| Flood damage score | 0.41513238 | 1 |  |  |
| Insured value | 0.357770871 | 0.101498968 | 1 |  |
| Policy Annual Premium | 0.541212289 | 0.226658988 | 0.774233297 | 1 |

Table 1 : Correlation Analysis

**Adjusting Premium based on Z-Flood Scores:**

**Limitations**:

* Not knowing the current mechanism used for premium calculation with respect to insured value. We could use relationship equation but that’s not very accurate representation with varied data values.
* Not knowing the company risk policy to understand the acceptable risk range along with respective premium adjustor, so we created a sample policy.

**Sample Risk Policy Used for Predictions:**

* Low risk for risk score between 0 and 40. Using premium adjustor of 0.8.
* Medium risk for risk score between 40 and 70. Using premium adjustor of 1.5.
* High risk for risk score between 70-100. Using premium adjustor of 2.

Average Predicted Annual Premium

(current premium x risk adjustor based on risk policy) = $1,400

Annual Premium Current = $209 million

Annual Premium Predicted = $243 million

**Average Premiums for different risk classes:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | No. of. Properties | Current | | Predicted | |
| Annual Premium | Average Premium | Annual Premium | Average Premium |
| Low Risk | 118,630 | 101.78 mil | 858.02 | 81.42 mil | 686.41 |
| Medium Risk | 45,901 | 88.8 mil | 1934.98 | 133.2 mil | 2902.46 |
| High Risk | 9450 | 19.3 mil | 2045.99 | 28 mil | 3068.98 |

Table 2: Graphical Representation of change in Portfolio with Z-FLOOD

With Z-Flood, we are able to rebalance the portfolio to make it more focussed on risk and while doing that we are able to reduce the premium for low risk property and increase it for high risk property. This would give us competitive edge to attract and retain more low risk properties as they are our largest portfolio category while keeping price more transparent. We are also overall able to increase our annual premium 34 million.

**Relationship of premium and risk:**

A graph with blue dots and numbers

Description automatically generated

Graph 2: Distribution of current annual premium over risk score.

A graph with blue dots and numbers

Description automatically generated

Graph 3: Distribution of predicted annual premium adjusted with the risk score.

As the risk increase by adjusting the annual premium with risk score, we are able to increase the slope indicating a stronger increasing relationship between risk and premium. With R square value we can clearly see high dependability of premium with change in risk score.

## Benefits of using Z-FLOOD

* Enhanced Risk Assessment

Z-FLOOD provides Grizzly Insurance with a sophisticated flood risk assessment tool. By assigning flood occurrence and damage scores to each property, Z-FLOOD enables Grizzly to more accurately evaluate the potential risks associated with insuring a property. This allows Grizzly to make more informed underwriting decisions, ensuring that they adequately price their policies based on the specific flood risk profile of each property.

* Customized Underwriting

With the detailed flood risk scores provided by Z-FLOOD, Grizzly Insurance can tailor their underwriting processes. They can differentiate between properties with varying levels of flood risk, adjusting coverage terms, policy premiums, and deductibles accordingly. This customization leads to fairer pricing for policyholders and helps prevent potential underinsurance or over insurance scenarios.

* Competitive Advantage

By leveraging Z-FLOOD's advanced flood risk assessment capabilities, Grizzly Insurance can gain a competitive edge in the market. They can position themselves as an insurer that employs cutting-edge technology to provide accurate and personalized risk assessments, which can attract new policyholders and retain existing ones who value comprehensive coverage and risk management.

* Diversifying portfolio risk management

With Z-Flood, Grizzly will be able to diversify and better manage the risk by offering pricing as per the risk policy that meet the Grizzly Business Principles. With more historical data and financial standing, the risk policy could be edited to recover losses, generate revenue, compete and avoid uninformed decisions.

* Regulatory Compliance

Many regions have regulations and guidelines related to risk assessment and pricing in the insurance industry. Z-FLOOD can assist Grizzly Insurance in meeting regulatory requirements by providing a standardized and transparent method for evaluating flood risk. This helps ensure compliance while maintaining fairness and transparency in policy pricing.

* Long-Term Sustainability

By effectively managing flood risk and preventing excessive losses, Grizzly Insurance can enhance its long-term sustainability and financial stability. This positions the company for continued growth and profitability in a volatile insurance market.

* Investment Attraction

Z-FLOOD's advanced risk assessment capabilities can make Grizzly Insurance an attractive partner for investors and reinsurers. The ability to accurately quantify and manage flood risk enhances the company's credibility and attractiveness within the financial industry.

## Quantifying Z-FLOOD's Value to Grizzly's Profitability

The implementation of Z-FLOOD has brought about significant enhancements to Grizzly's profitability, demonstrated through various key indicators. By harnessing the power of Z-FLOOD, Grizzly was able to achieve a substantial increase in its annual premium collection, surging from 209 million to an impressive 243 million. This monumental jump of 34 million in annual premium revenue illustrates the immense value that Z-FLOOD has introduced to Grizzly's financial landscape.

Moreover, the adoption of Z-FLOOD has translated into a strategic advantage for Grizzly in the competitive insurance market. One of the most compelling outcomes has been the empowerment of Grizzly to cater more effectively to its largest customer category group – the low-risk group. By offering more competitive pricing to this group, Grizzly has solidified its position in the market, strengthening its market presence and augmenting its customer base.

Simultaneously, Z-FLOOD has played a pivotal role in refining the risk assessment process for Grizzly's clientele. While the high and medium risk groups experienced an uptick in their premium rates, this adjustment is underscored by the necessity for accurate risk analysis. Z-FLOOD enables Grizzly to undertake precise risk evaluations, ensuring that premium rates correspond meticulously with the actual risk level. This alignment between risk and premium bolsters Grizzly's credibility and aids in maintaining a competitive edge.

A noteworthy aspect of Z-FLOOD's impact on Grizzly's profitability lies in the dynamic risk policy that it facilitates. The introduction of a Risk Policy underscores Grizzly's commitment to aligning its customer interests with its risk management strategy. Z-FLOOD empowers Grizzly to fine-tune its risk policy to cater to diverse risk categories while striving to maintain competitiveness in the market.

## Further Initiatives

To incentivize Grizzly Insurance to adopt Z-FLOOD, Zesty.AI can provide following additional incentives/support.

**Pilot Program:** A pilot program where Zesty.ai collaborates with Grizzly Insurance on a limited-scale implementation of Z-FLOOD. The pilot can demonstrate tangible results within a controlled environment, showcasing the value Z-FLOOD brings to Grizzly's risk assessment accuracy, premium calculations, and overall profitability.

**ROI Projection:** Offer a comprehensive return on investment (ROI) projection that outlines the anticipated financial gains resulting from Z-FLOOD's adoption. This can include estimates of increased premium collections, reduced claim payouts, and improved risk management efficiency.

**Demonstration Workshops:** Organize interactive workshops or webinars where Zesty.ai experts showcase the practical application of Z-FLOOD in Grizzly's context. These sessions can help decision-makers visualize the benefits and functionalities firsthand.

## Conclusion

The Z-FLOOD analysis conducted by Zesty.AI presents an opportunity of immense significance for Grizzly Insurance. The innovative flood assessment tool, Z-FLOOD, has demonstrated its capability to transform Grizzly's risk assessment and underwriting strategies, paving the way for enhanced profitability, competitiveness, and sustainability.

Through comprehensive evaluation and quantification, this proposal has illuminated the potential value that Z-FLOOD could offer to Grizzly Insurance. The incorporation of Z-FLOOD's flood occurrence and damage scores provides a sophisticated approach to risk assessment, enabling Grizzly to make informed underwriting decisions and tailor coverage based on individual property flood risks. This customization not only ensures fair and accurate policy pricing but also positions Grizzly as a technologically advanced and customer-centric insurer.

By redefining the portfolio landscape, Z-FLOOD empowers Grizzly to optimize its risk exposure. The ability to adjust premiums according to property-specific risk scores has led to a remarkable increase in annual premium revenue, demonstrating Z-FLOOD's tangible impact on Grizzly's financial performance. The tool's role in diversifying risk management, complying with regulations, and attracting potential investors further underscores its strategic importance.

The adoption of Z-FLOOD has allowed Grizzly to strike a balance between offering competitive pricing to low-risk properties while accurately reflecting risk for high-risk properties. This equilibrium enhances Grizzly's market presence, fosters customer trust, and fortifies its position in the competitive insurance landscape.

In essence, Z-FLOOD's integration presents a paradigm shift in risk assessment and underwriting for Grizzly Insurance. Its value proposition extends beyond numerical figures, encompassing enhanced risk management, customer satisfaction, and long-term financial sustainability. By leveraging Z-FLOOD's capabilities, Grizzly can confidently embark on a path towards growth, innovation, and enduring success.

As Grizzly Insurance contemplates the adoption of Z-FLOOD, the insights provided in this analysis serve as a comprehensive guide, outlining the multifaceted benefits and potential outcomes associated with this transformative tool. The collaboration between Grizzly Insurance and Zesty.AI presents an exciting prospect for both entities to drive positive change in the insurance industry, embracing technology to empower informed decision-making and secure a prosperous future.

In consideration of the demonstrated benefits, the partnership between Grizzly Insurance and Zesty.AI to implement Z-FLOOD stands as a compelling proposition, heralding a new era of precision, competitiveness, and customer-centricity. The potential impact outlined herein presents a compelling case for Grizzly Insurance to seize this opportunity and embark on a journey towards a more resilient, efficient, and prosperous future with Z-FLOOD as a cornerstone of its operations.