



BEYOND EMERGING RISKS:
**INNOVATING RESILIENCE AND
ADAPTATION**



13th to 15th Nov || Mombasa, Kenya



Risk Based Pricing in Africa (General Insurance)

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AGENDA



Introduction and background



Main challenges identified in Africa



Survey results

- Demographics
- Implementation
- Expertise
- Challenges
- Current Solution

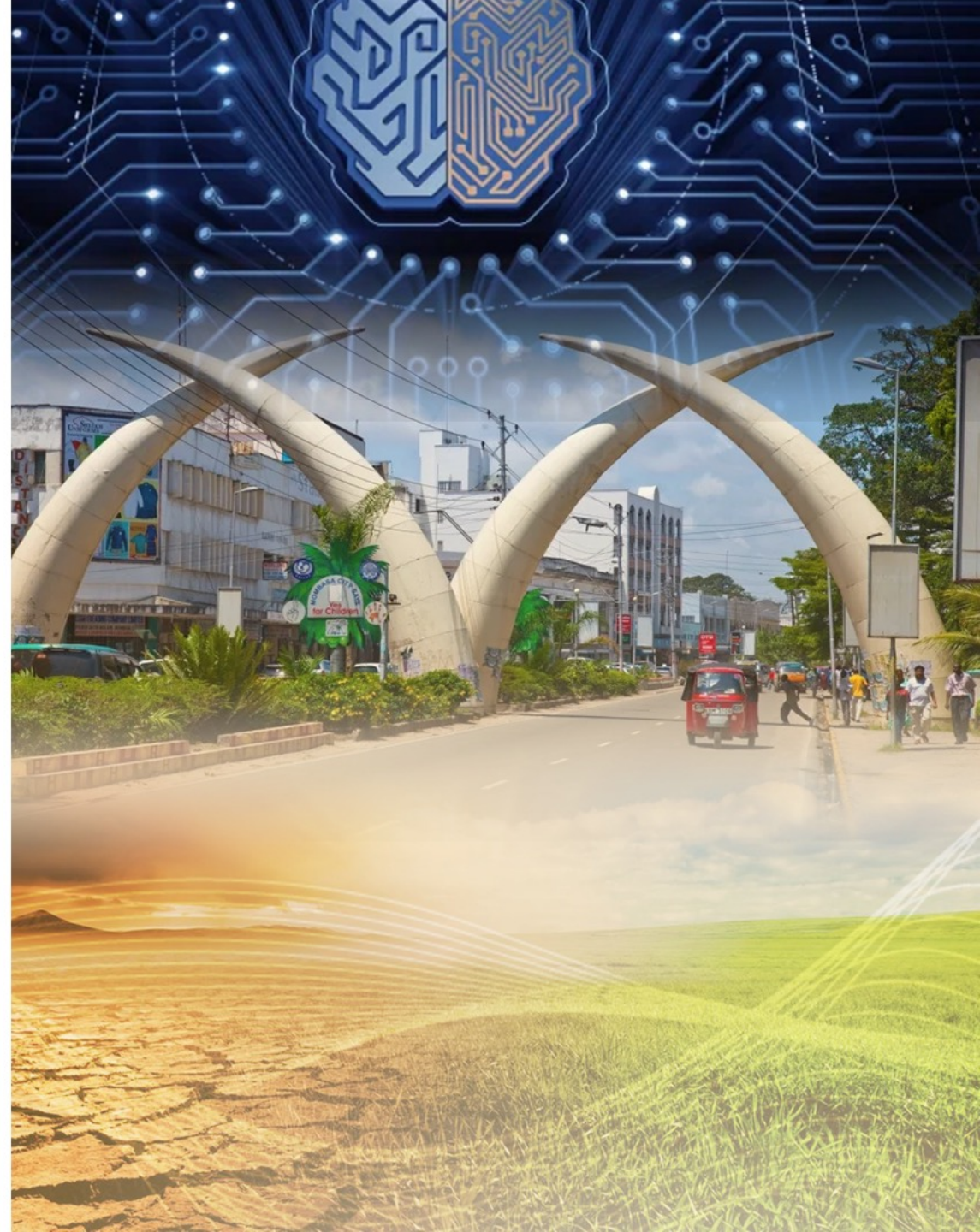


Opportunities and benefits of Risk-Based Pricing in Africa

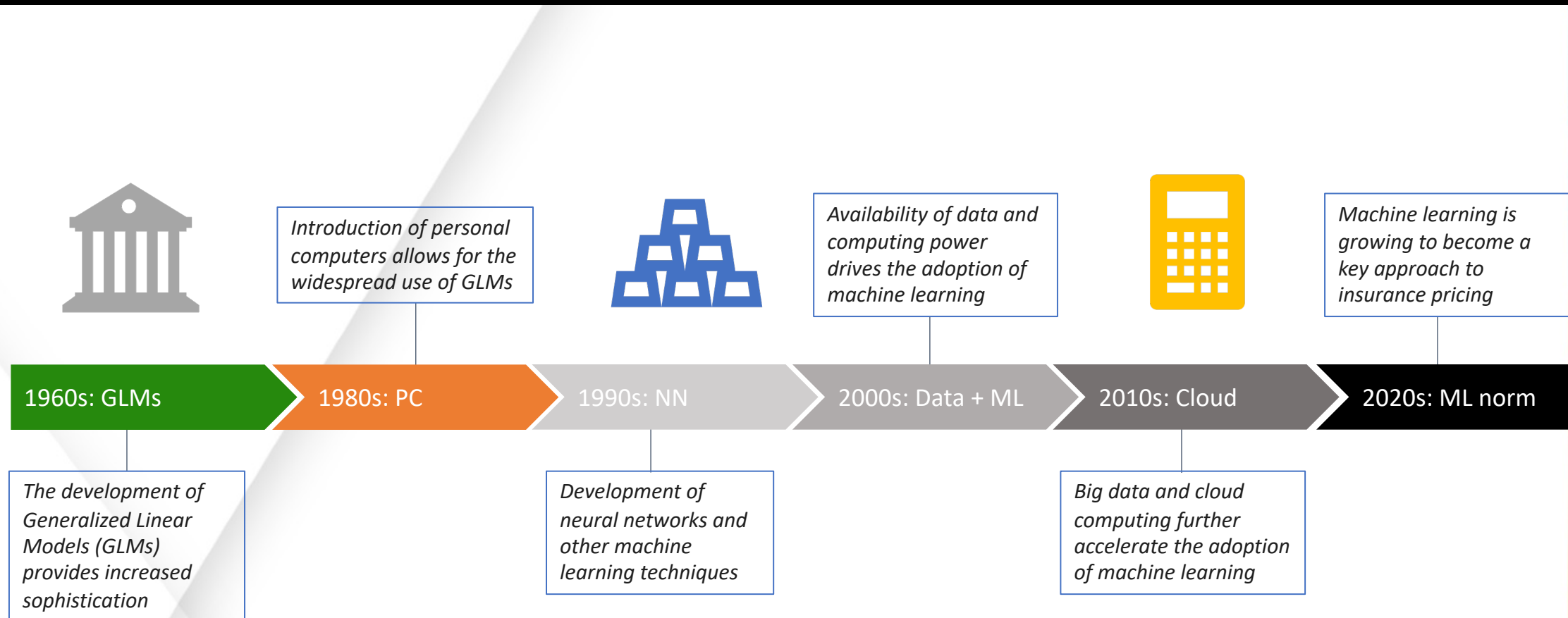


Questions

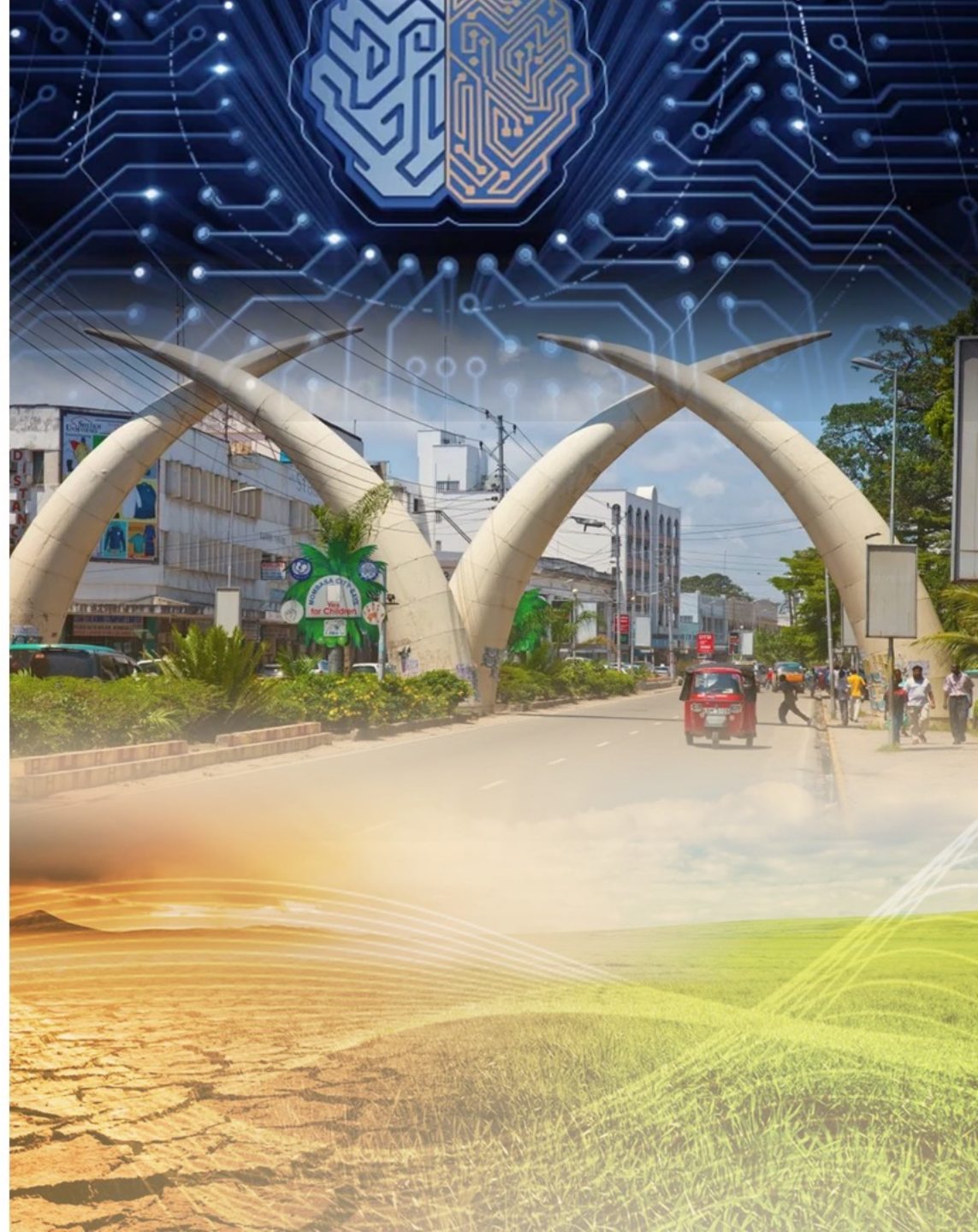
Introduction and background



Risk-Based Pricing | Introduction and background



Main challenges in Africa



Risk-Based Pricing | Main challenges in Africa



Survey composition,
limitations, and next steps



Risk-Based Pricing | Survey composition, limitations, and next steps



- 19 questions
- 10 countries
- 4 sections
- 5 minute survey
- Specific to general insurance

Composition



- Can't draw conclusions on a country level
- Respondents represent entire organisations
- Responses are limited to select options

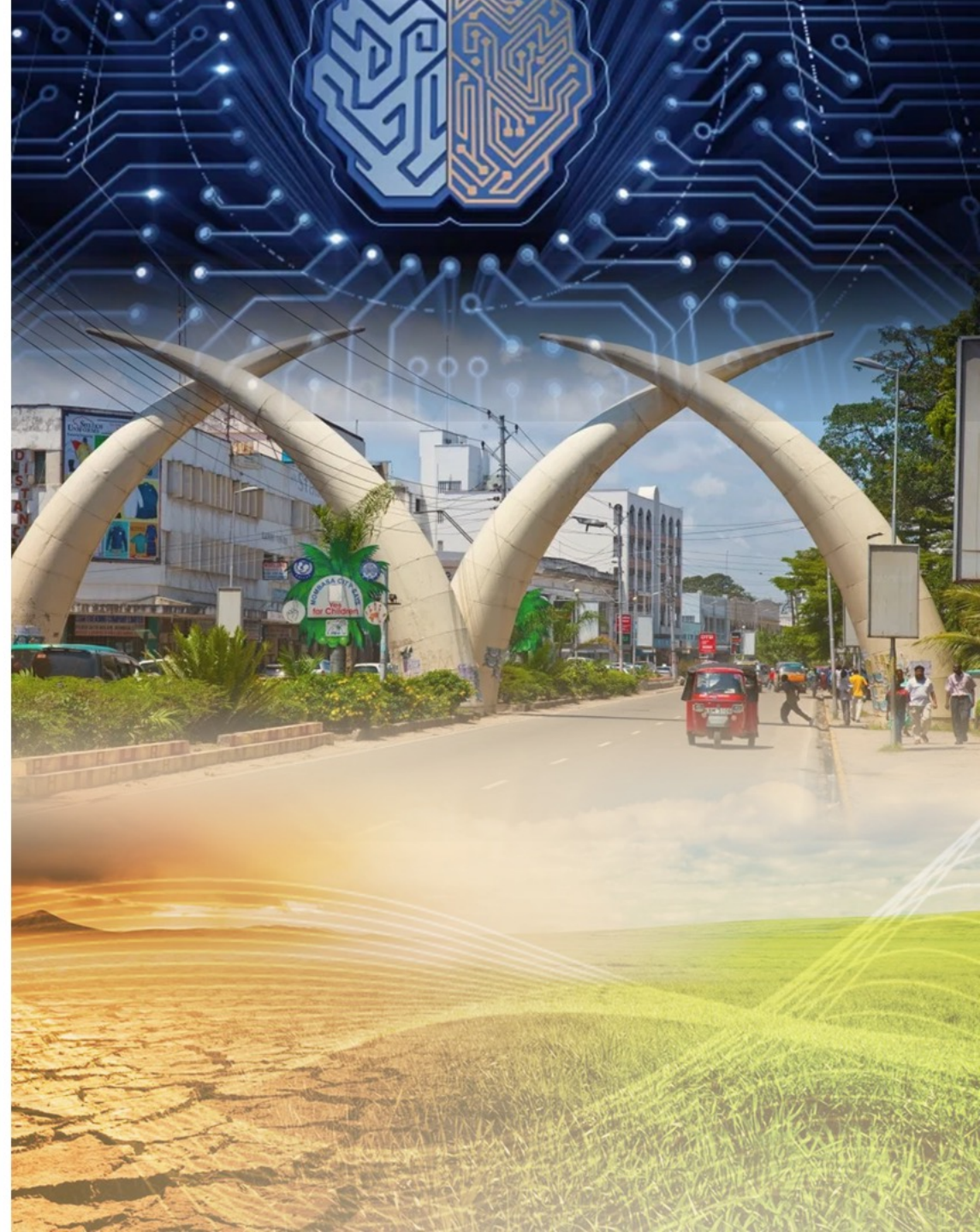
Limitations



- Increase respondents and do update to survey results
- Consolidate view at a country level

Next steps

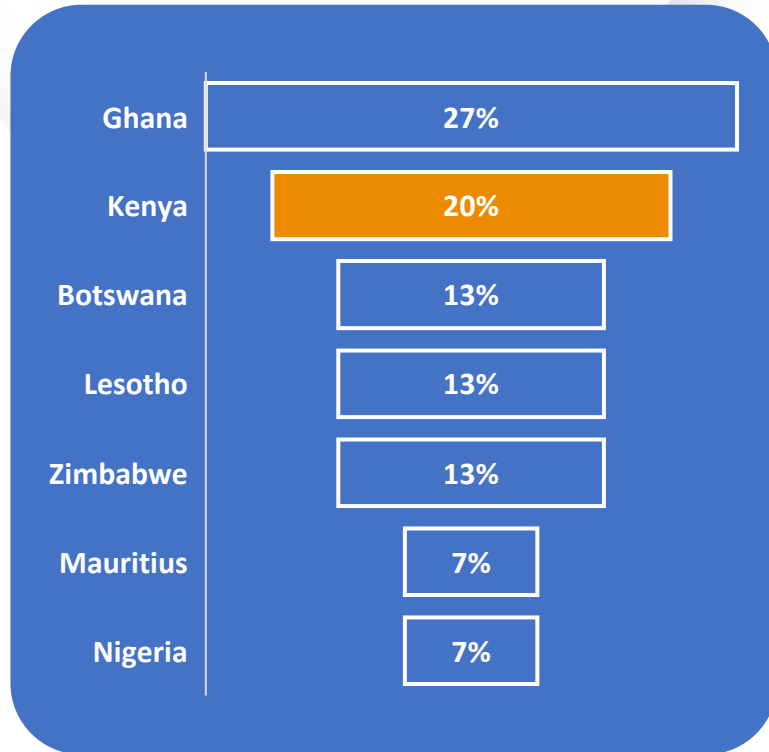
Survey results



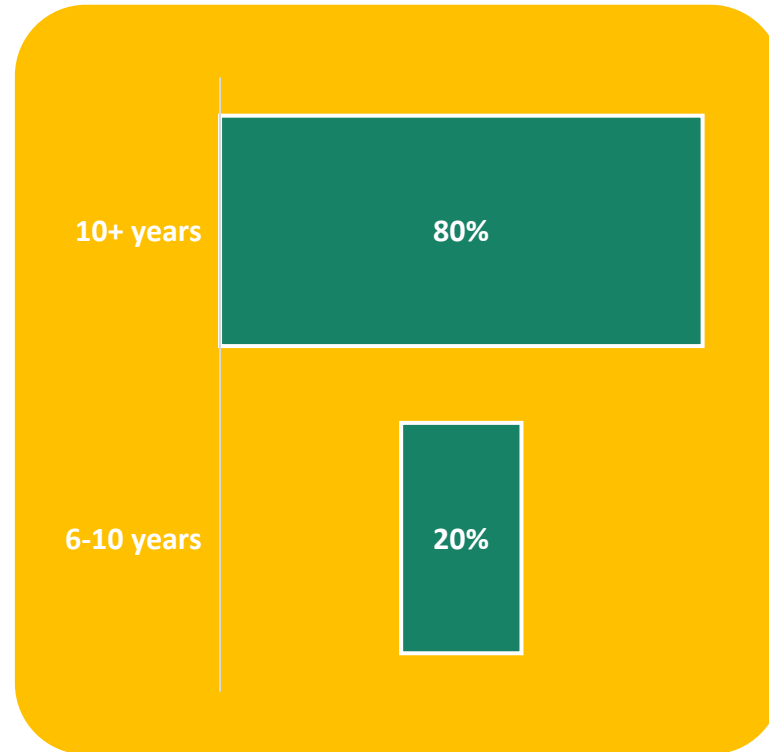
Risk-Based Pricing | Survey results | Demographics

Demographics

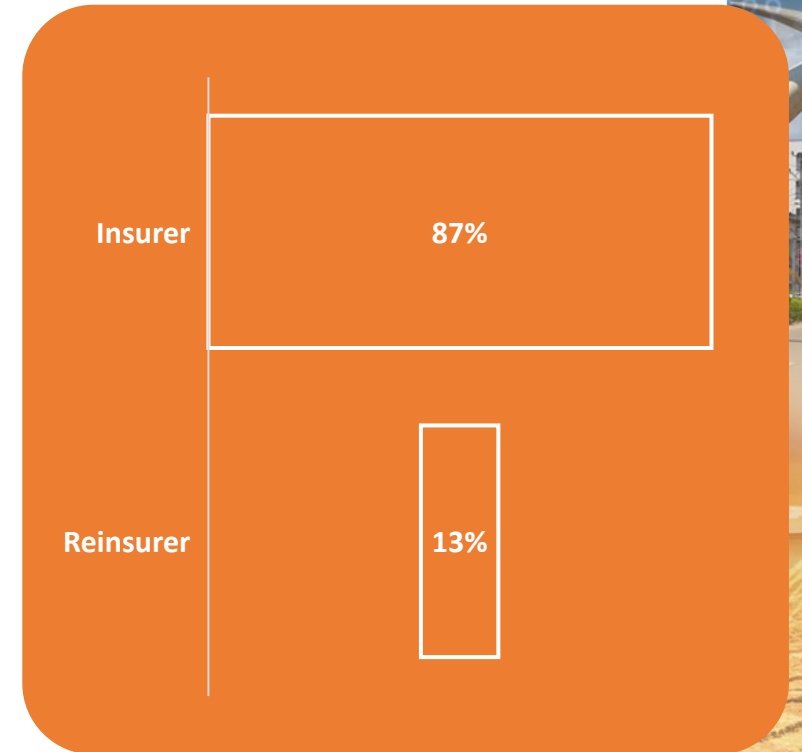
Country of operations



Years in existence



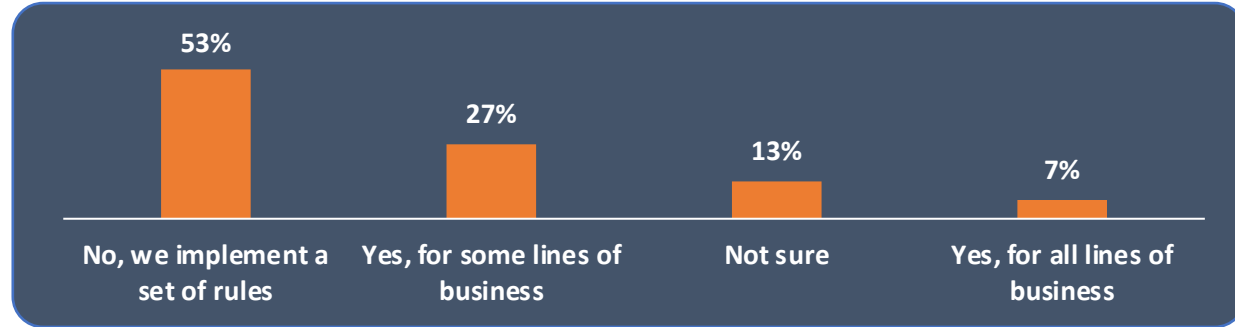
Insurer vs reinsurer



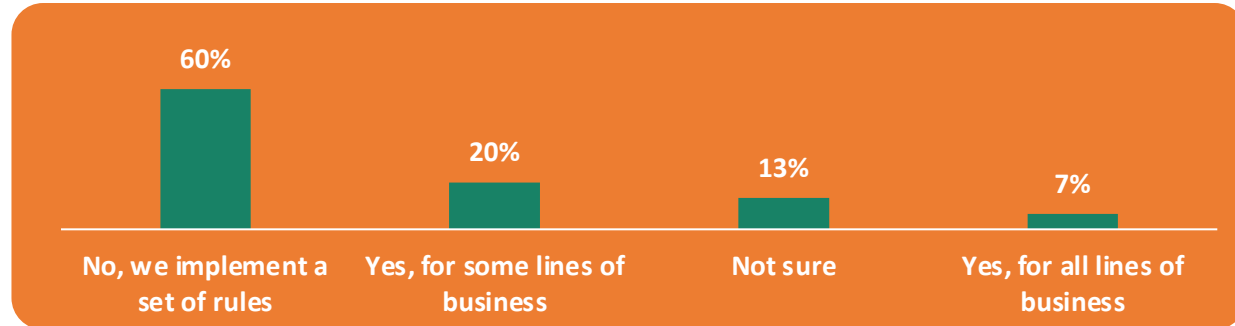
Risk-Based Pricing | Survey results | Implementation

Implementation

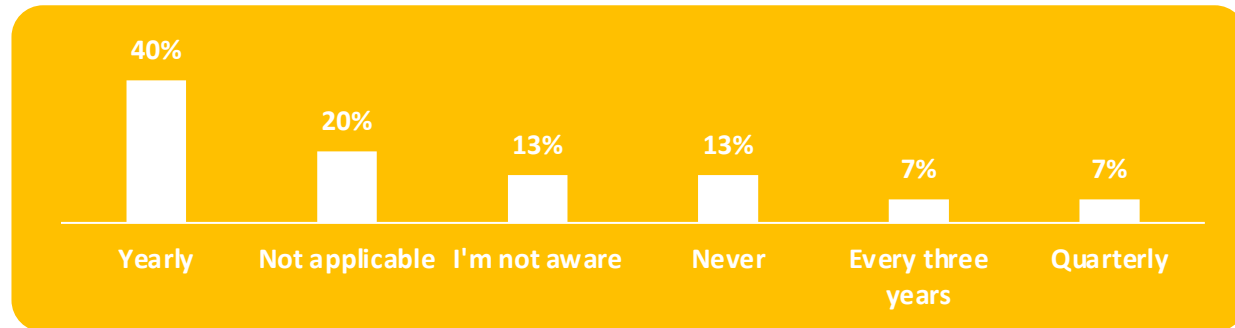
Does your organisation have a short-term insurance new business pricing model?



Does your organisation have a short-term insurance model for renewal pricing?



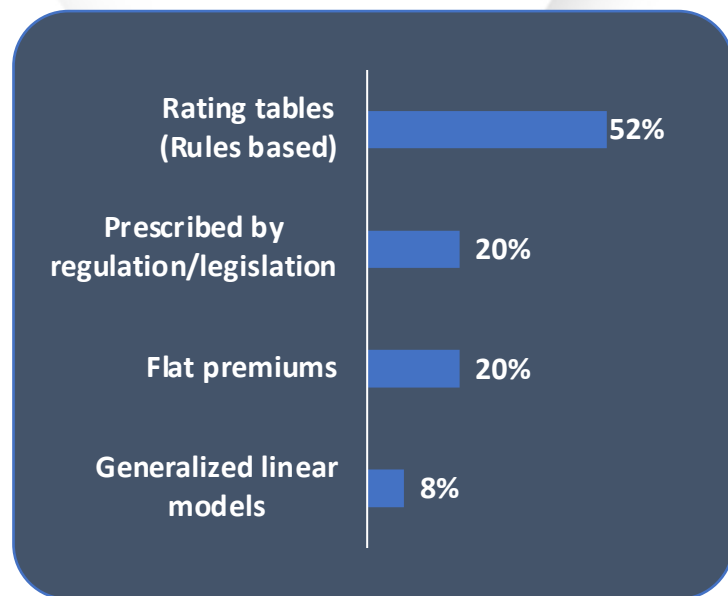
How frequently does your organisation update its short-term insurance pricing models and methods?



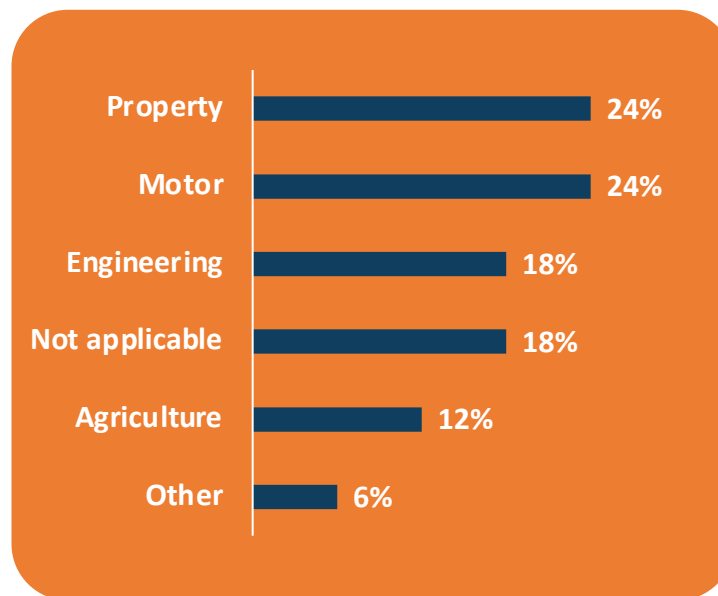
Risk-Based Pricing | Survey results | Implementation (2)

Implementation

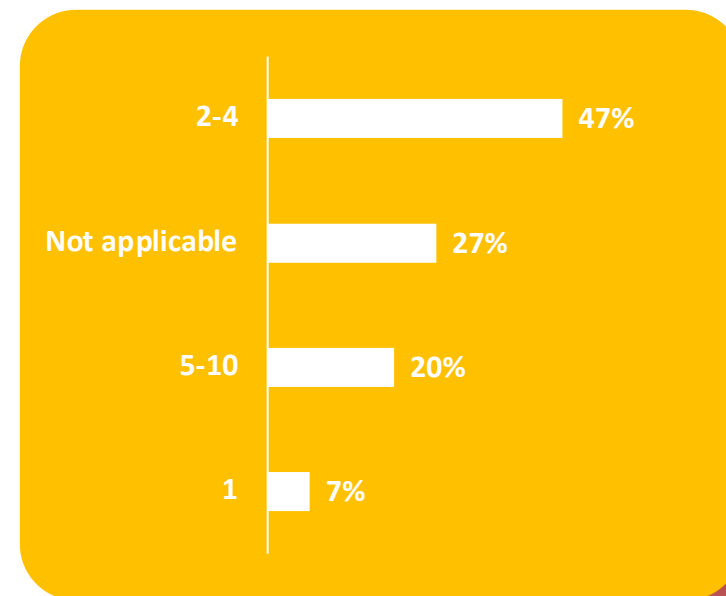
Which of the following methodologies/approaches are most commonly used to set premiums within your organisation?



For which of your products are you most likely to use a short-term pricing model (i.e. full risk-based pricing model, not rating tables nor flat rates)?



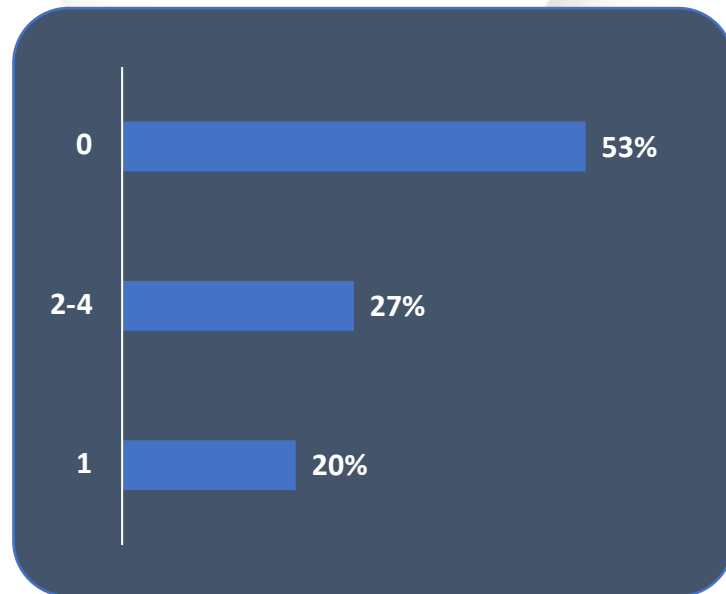
If your organisation uses rating factors to set premiums, how many short-term insurance rating factors (age, gender, geographic location etc.) are being used?



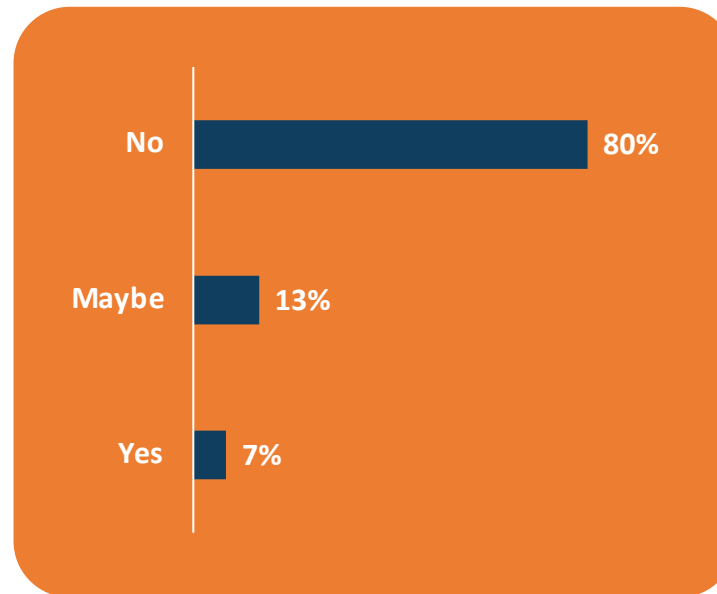
Risk-Based Pricing | Survey results | Expertise

Expertise

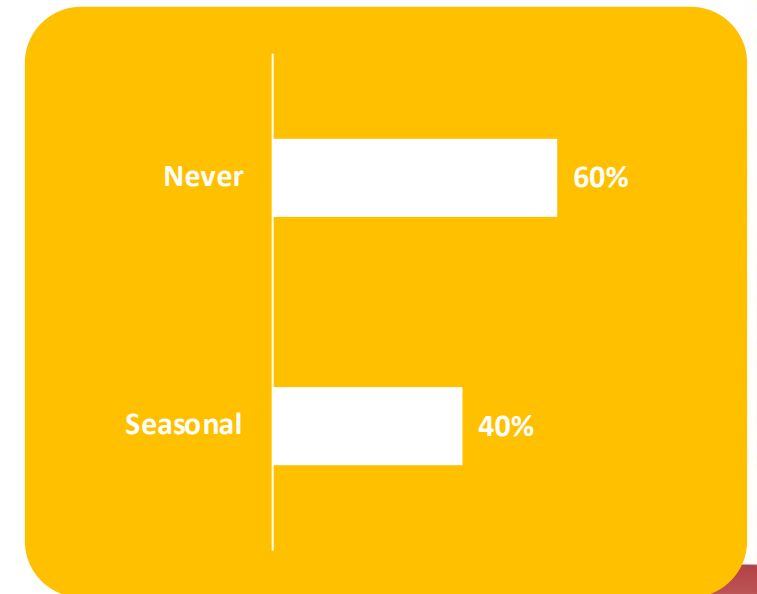
Approximately how many pricing professionals or pricing actuaries are employed within your organisation?



Has your organisation performed training before on the use of machine learning or Generalized Linear Models (GLM's)?

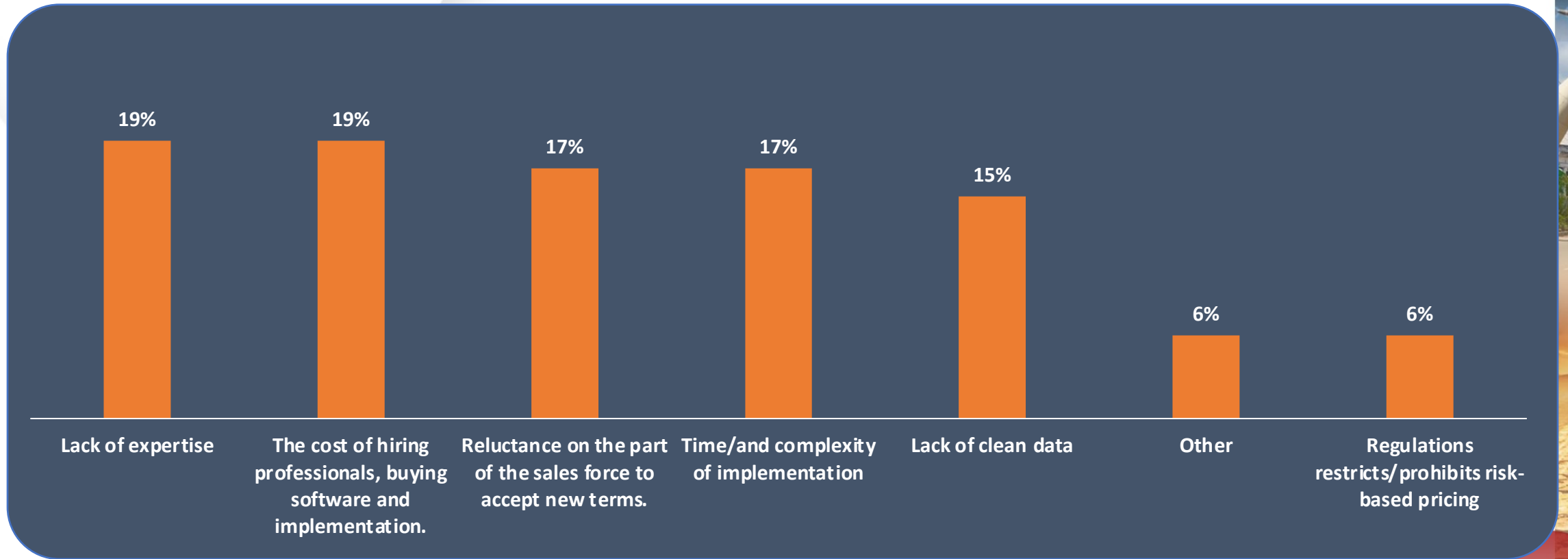


How frequently does your pricing team attend training?



Challenges

What is the biggest challenge to your organisation when it comes to implementing risk-based pricing?



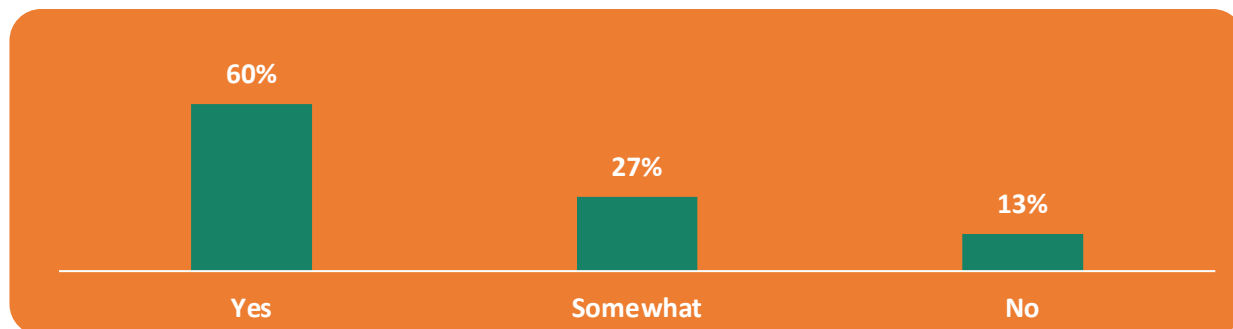
Risk-Based Pricing | Survey results | Challenges (2)

Challenges

For the purpose of pricing, do you feel that your organisation has appropriate claims data at an individual policy level?



For the purpose of pricing, do you feel that your organisation has appropriate exposure data at a individual policy level



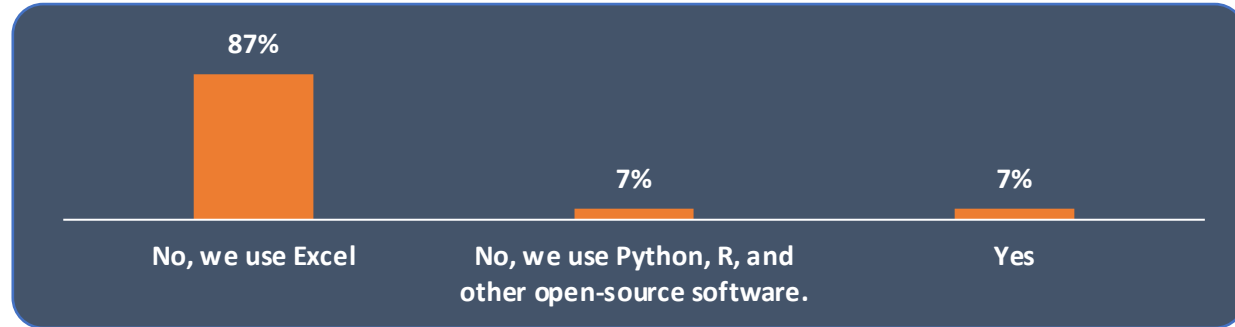
Is your organisation open to receiving training on short-term insurance risk-based pricing and its benefits?



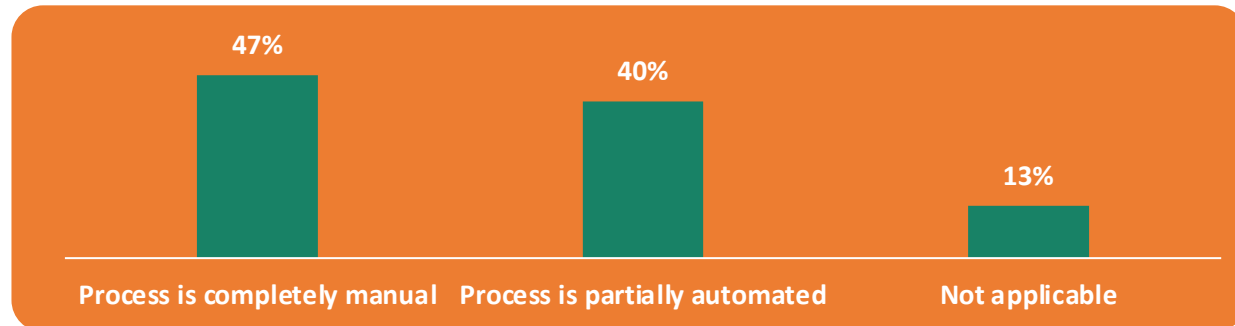
Risk-Based Pricing | Survey results | Current Solution

Current Solution

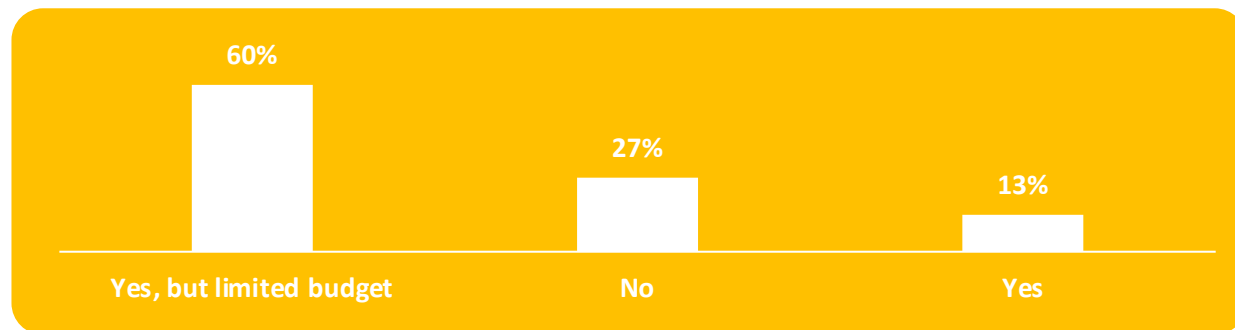
Does your organisation currently make use of any specific pricing software?



Is your quotation software integrated with your pricing software or are manual updates made for changes in pricing?



Does your organisation have appetite and budget for acquiring short-term insurance pricing software and expertise?



Summary - Conclusions



Implementation

- ❑ Organizations use a set of rules for pricing
- ❑ Rules are updated annually
- ❑ Insurers are likely to only have a new business model
- ❑ Rules are typically based on 2-4 factors



Expertise

- ❑ Lack of internal training on pricing is the norm
- ❑ Therefore, no training on the use of modern techniques takes place
- ❑ Most institutions have no pricing professionals



Challenges

- ❑ Lack of expertise is the main challenge
- ❑ Sales force might be reluctant to change
- ❑ Complexity of implementation is a key concern
- ❑ Lack of data is a secondary concern



Current Solution

- ❑ Room for improvement on current solutions
- ❑ Most insurers are interested on being trained on pricing.
- ❑ Insurers are keen to adopt/try out risk based pricing approaches

Opportunities and benefits of risk-based pricing in Africa



Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (1)

Impact and interaction with other business areas/objectives



Underwriting: leads to more efficient underwriting decisions



Customer segmentation enables targeting of marketing and sales efforts



Enhanced risk management: can develop targeted risk mitigation strategies.



Investment returns generated from business volumes as a key driver of earnings



Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (2)

Motor third party example - Dataset

- Consider a book of 677,991 motor third party policies in **France**
- Policies provide cover for one-year
- Number of claims per policy is known
- Multiple rating factors are provided



Rating factors considered



Area



VehPower



VehAge



DrivAge



BonusMalus



VehBrand



VehGas



Region

Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (3)

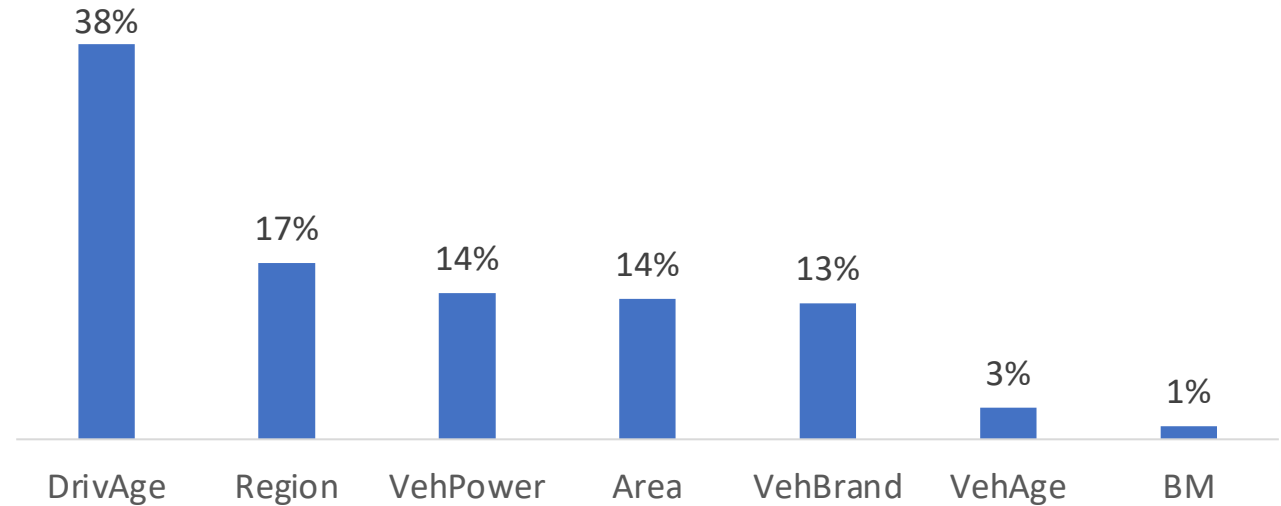
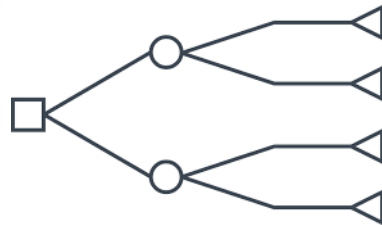
Motor third party example – Model fit

Flat rate premium



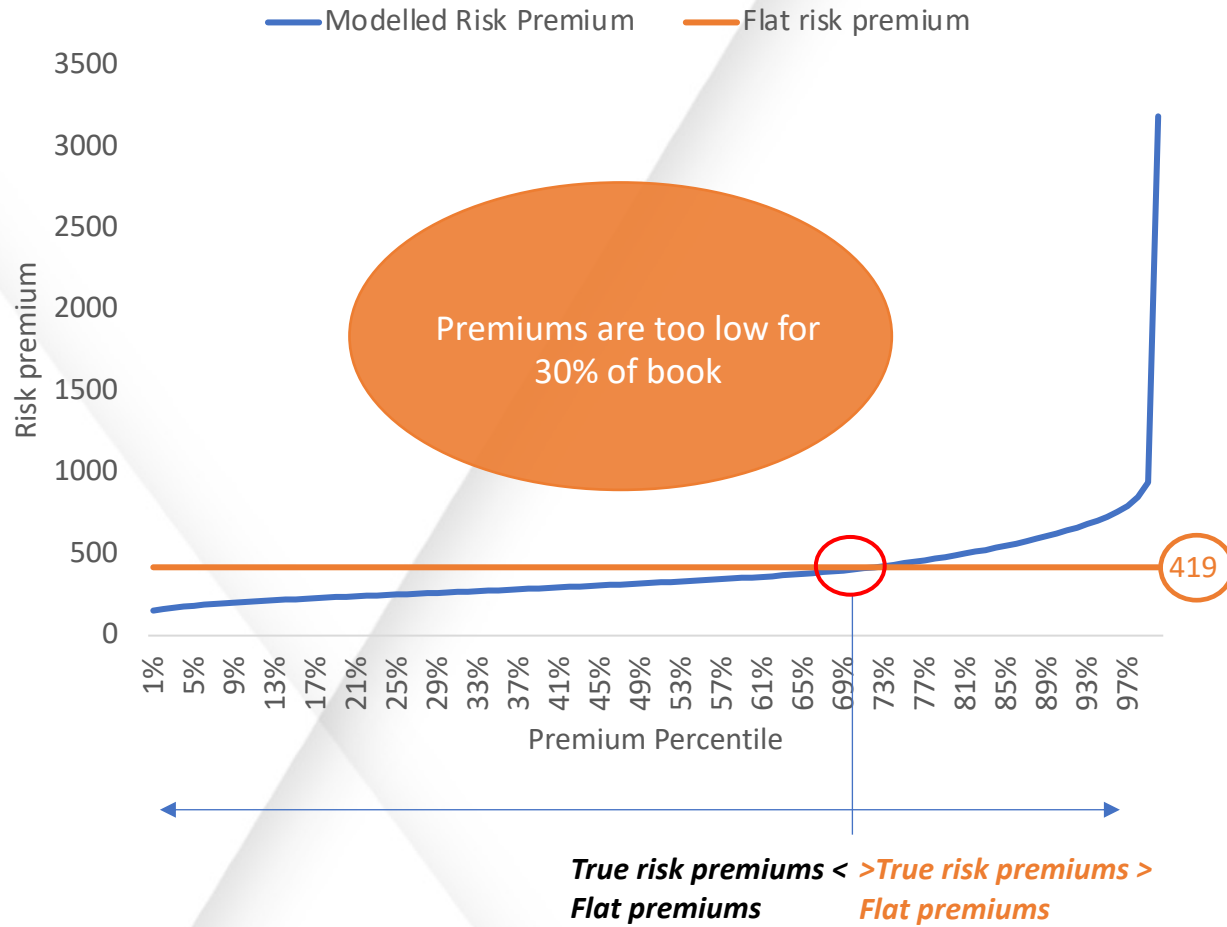
- Average cost per claim is assumed to be 50 000
- Average annual claims frequency is calculated to be 10.1%
- Monthly premium = Frequency x Severity = 419 per policy

*Machine learning –
Random forest
indicates most
important features*



Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (4)

Immediate opportunities (renewal pricing example)

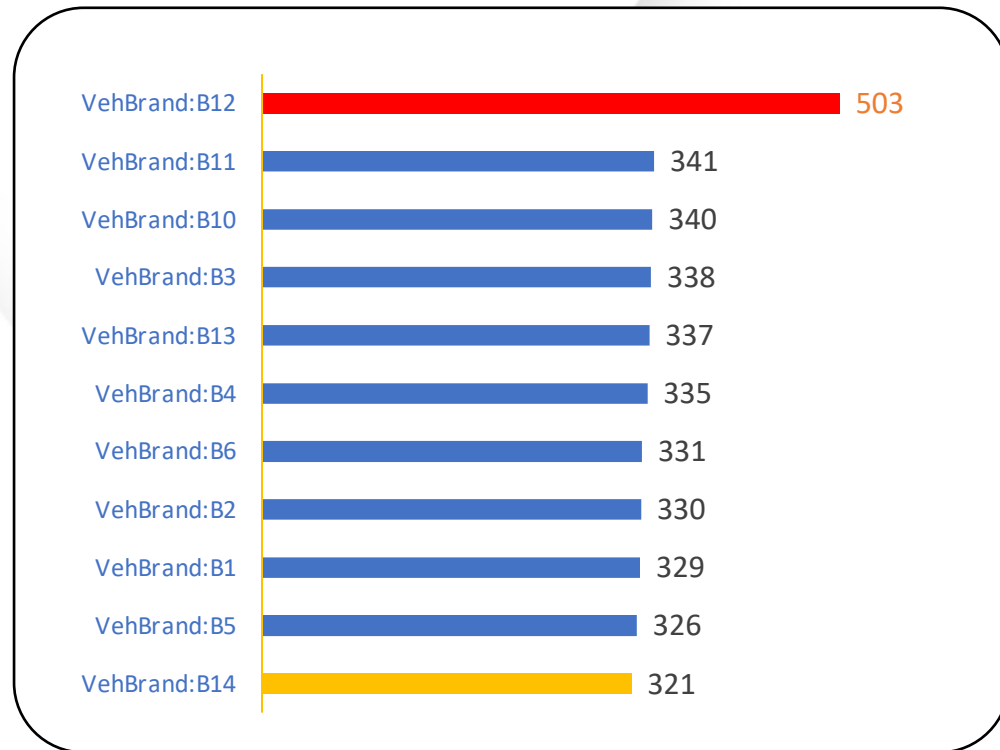


- Identification of most profitable segments by rating factor
- Identification of loss-making segments by rating factor
- Identification of segments that are loss making after consideration of investment returns
- Identification of segments that are uninsurable

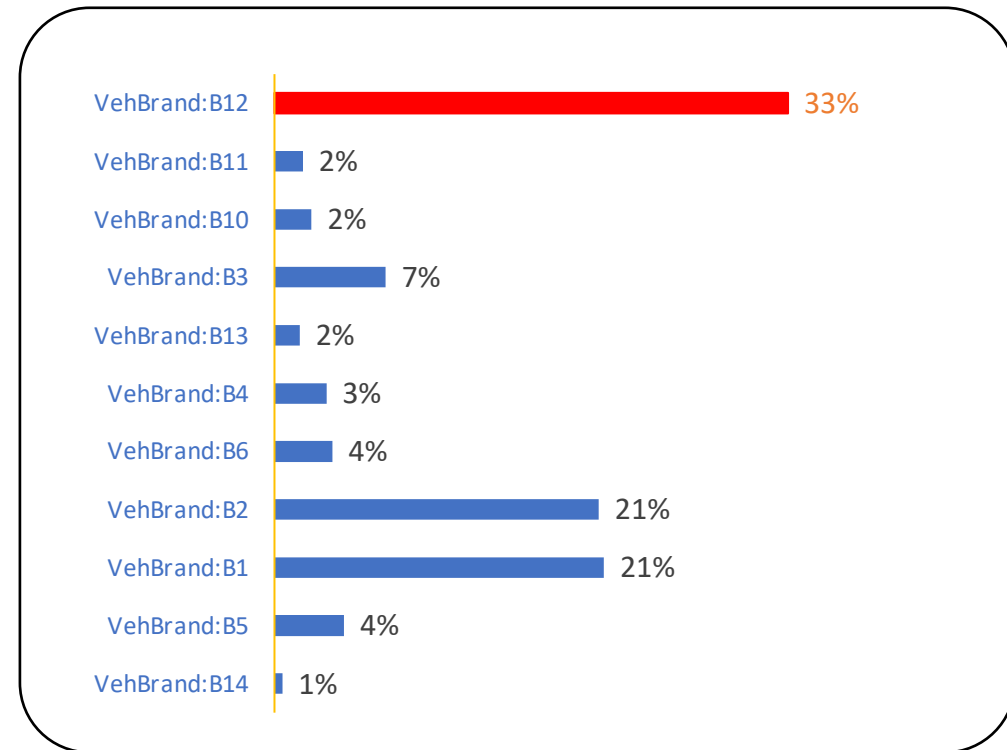


Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (5)

Identification of loss-making and profitable segments by Vehicle brand



Average premium: Modelled premiums

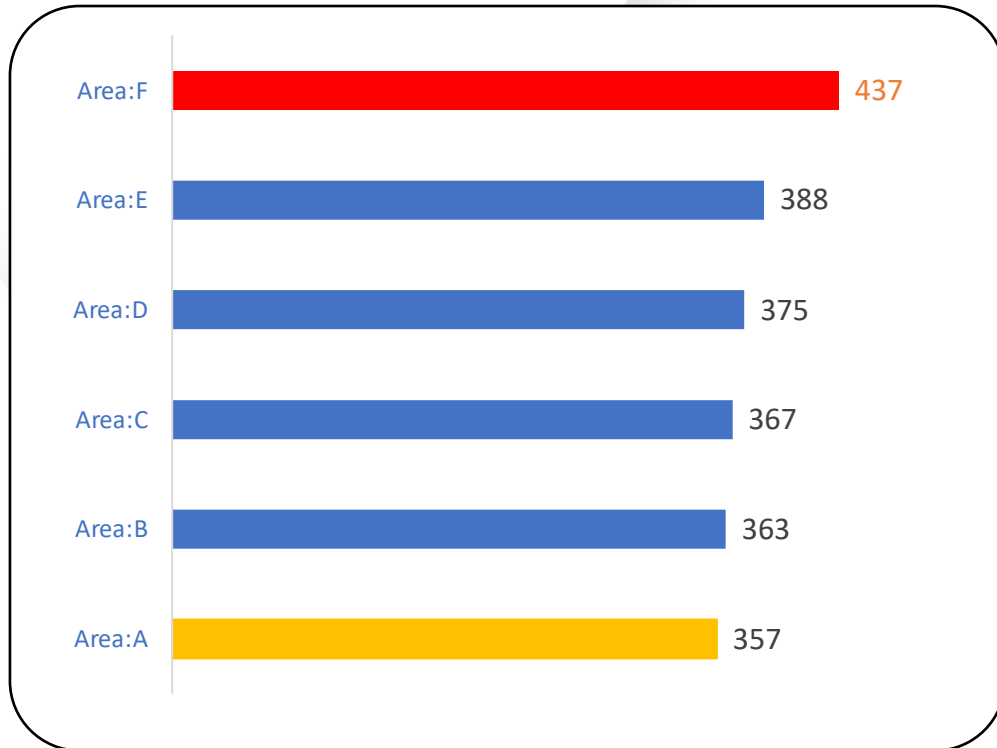


Proportion of total premium

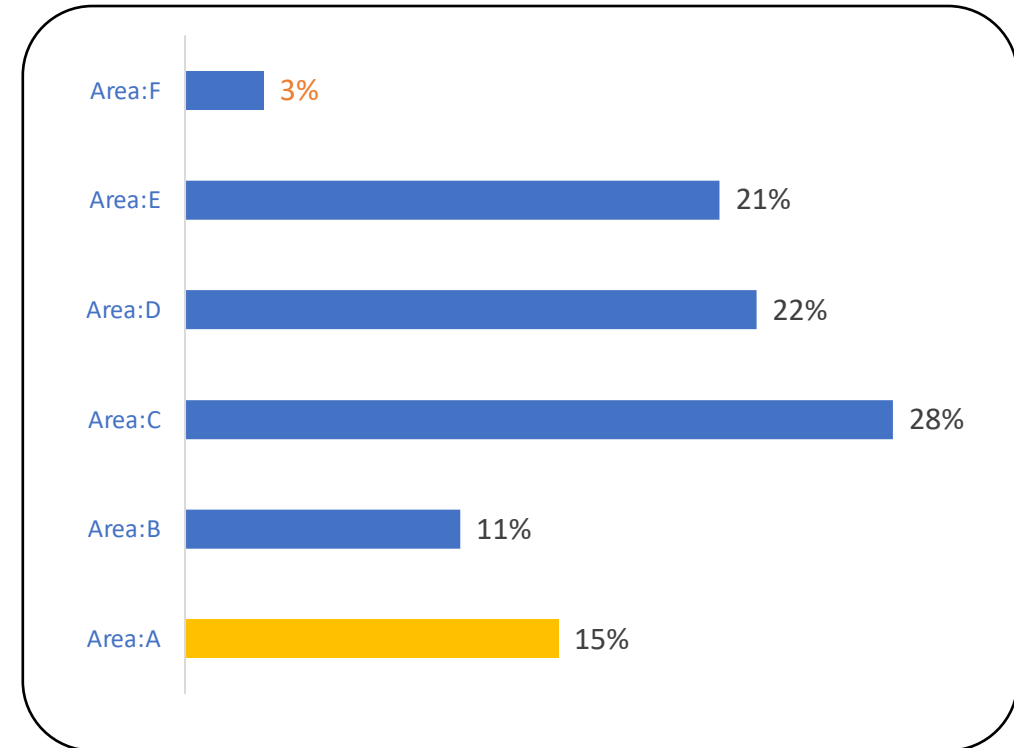


Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (6)

Identification of loss-making and profitable segments by Area/Location



Average premium: Modelled premiums

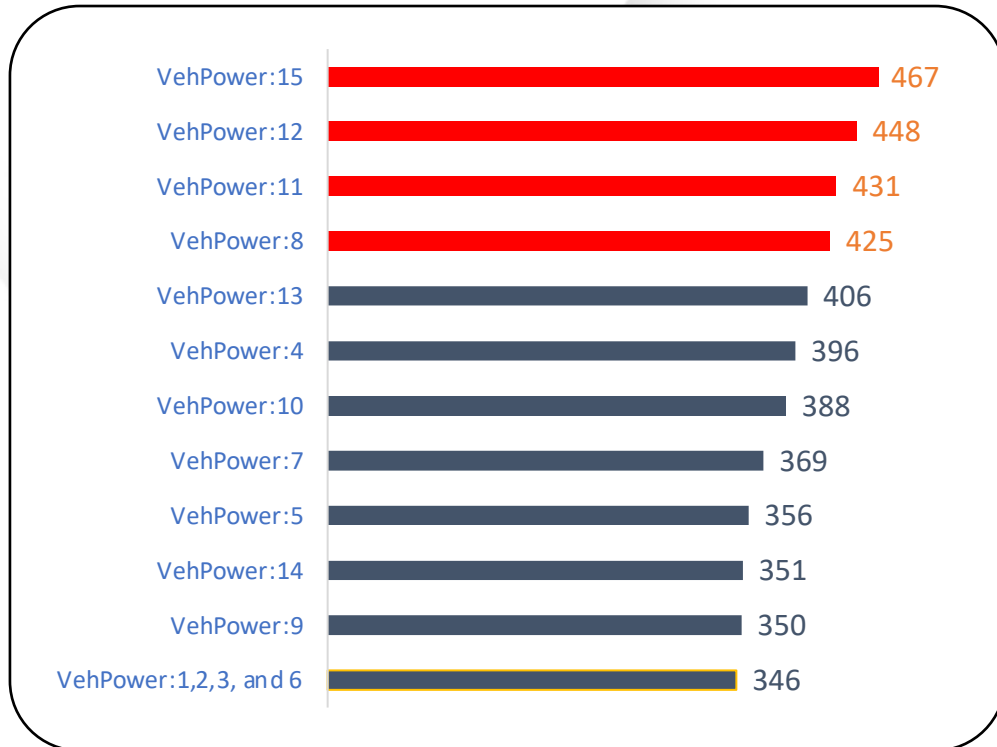


Proportion of total premium

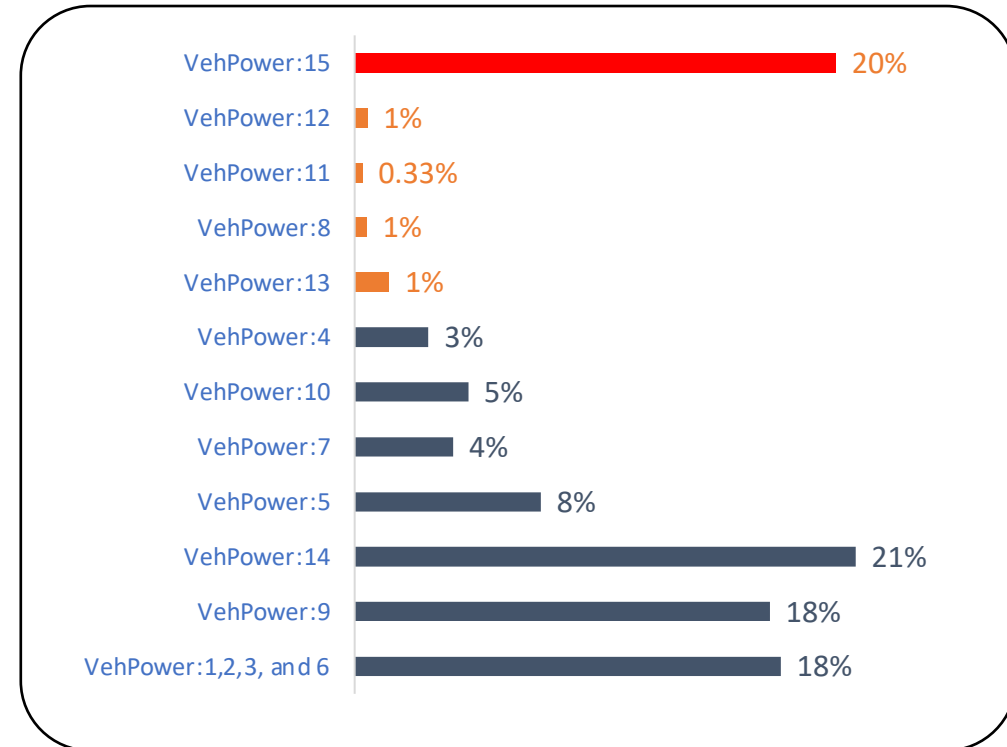


Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (7)

Identification of loss-making and profitable segments by Vehicle power



Average premium: Modelled premiums



Proportion of total premium



Risk-Based Pricing | Opportunities and benefits of risk-based pricing in Africa (8)

Immediate actions that can be taken



Insurers can decide to increase premiums, exclude certain risks, or introduce larger excesses for loss making segments of the book and vice versa



Can devise marketing campaigns to target the most profitable segments and avoid loss-making segments.



Insurer can decline to renew new policyholders and any combination of the above





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Thank you

