Life Insurance AI/ML Survey Results

Commissioner Kevin Gaffney, VT
Fall 2023 National Meeting
Orlando, Florida
December 1, 2023
Charge of Big Data and Artificial Intelligence (H) Working Group

Research the use of big data and artificial intelligence (AI) in the business of insurance, and evaluate existing regulatory frameworks for overseeing and monitoring their use. Present findings and recommended next steps to the Innovation and Technology (EX) Task Force, which may include model governance for the use of big data and AI for the insurance industry.

Goals
1. To gain a better understanding of the insurance industry’s use and governance of AI.
2. To seek information that could aid in the development of guidance or potential regulatory framework to support the insurance industry’s use of AI.
3. To inform regulators as to the current and planned business practices of companies.

P&C Personal Auto Insurance AI/ML Surveys Report Issued Dec. 2022

P&C Home Insurance AI/ML Surveys Report Issued Aug. 2023

Life Insurance AI/ML Surveys Report Issued Dec. 2023

NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS
Scope

Conducted under the market examination authorities of 14 states:

<table>
<thead>
<tr>
<th>CO</th>
<th>Jason Lapham</th>
<th>ND</th>
<th>Ross Hartley</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>George Bradner</td>
<td>OR</td>
<td>Brian Fjeldheim</td>
</tr>
<tr>
<td>IL</td>
<td>Erica Weyhenmeyer</td>
<td>PA</td>
<td>Shannen Logue</td>
</tr>
<tr>
<td>IA</td>
<td>Tammi Green</td>
<td>RI</td>
<td>Matt Gendron</td>
</tr>
<tr>
<td>LA</td>
<td>Nichole Torblaa</td>
<td>VT</td>
<td>Commissioner Kevin Gaffney</td>
</tr>
<tr>
<td>MN</td>
<td>Fred Andersen</td>
<td>VA</td>
<td>Eric Lowe</td>
</tr>
<tr>
<td>NE</td>
<td>Director Eric Dunning</td>
<td>WI</td>
<td>Lauren Van Buren</td>
</tr>
</tbody>
</table>

Criteria:

- Life insurance products only, not annuities
- At least $250 M national life insurance premium in 2021
- Covered at least 10,000 lives by issuing term insurance in 2021
- InsurTech company
Life Insurers Report Significantly Less Usage of AI/ML Than Auto and Home Insurers

**AUTO INSURER AI/ML SURVEYS**
- 193 Auto Insurers responded
- AI/ML algorithms exclude Generalized Linear Models

**HOME INSURER AI/ML SURVEYS**
- 194 Home Insurers responded
- AI/ML algorithms exclude Generalized Linear Models

**LIFE INSURER AI/ML SURVEYS**
- 161 Life Insurers responded
- AI/ML algorithms *include* Generalized Linear Models

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Use, Plan to Use, or Explore

<table>
<thead>
<tr>
<th>Automation Type</th>
<th>Use, Plan to Use, or Explore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Insurers</td>
<td>88%</td>
</tr>
<tr>
<td>Home Insurers</td>
<td>70%</td>
</tr>
<tr>
<td>Life Insurers</td>
<td>58%</td>
</tr>
</tbody>
</table>
Limited Justification, Resource Constraints, and Legacy Systems Limit AI/ML Adoption

**AUTO INSURER AI/ML SURVEYS**

Of the 12% responding that they do not currently use, plan to use or explore using AI/ML...

**Why not?**

“No compelling business reason”

“Lack of resources & expertise”

“Reliance on legacy systems/IT”

**HOME INSURER AI/ML SURVEYS**

Of the 30% responding that they do not currently use, plan to use or explore using AI/ML...

**Why not?**

“No compelling business reason”

“Lack of reliable data/security risk”

“Waiting for regulatory guidance”

“Reliance on legacy systems/IT”

**LIFE INSURER AI/ML SURVEYS**

Of the 42% responding that they do not currently use, plan to use or explore using AI/ML...

**Why not?**

“No compelling business reason”

“Lack of resources & expertise”

“Reliance on legacy systems/IT”
AI/ML Models in Life Insurance Are Mainly Used for Marketing and Underwriting

<table>
<thead>
<tr>
<th>% AI/ML Models in Use by Operation</th>
<th>TOP USES OF AI/ML MODELS IMPLEMENTED IN PRODUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marketing</strong> 36%</td>
<td><strong>Marketing</strong></td>
</tr>
<tr>
<td></td>
<td>• Target Online Advertising</td>
</tr>
<tr>
<td></td>
<td>• Provision of Offers to Existing Customers</td>
</tr>
<tr>
<td></td>
<td>• Identification of Recipients of Mail or Phone Advertising</td>
</tr>
<tr>
<td></td>
<td>• Identification of Potential Customer Groups</td>
</tr>
<tr>
<td></td>
<td>• Other Marketing Functions</td>
</tr>
<tr>
<td><strong>Underwriting</strong> 34%</td>
<td><strong>Pricing &amp; Underwriting</strong></td>
</tr>
<tr>
<td></td>
<td>• Reduced Time to Issue</td>
</tr>
<tr>
<td></td>
<td>• Automated &amp; Non-Automated Approval/Denial Decisions</td>
</tr>
<tr>
<td></td>
<td>• Underwriting Risk Class</td>
</tr>
<tr>
<td><strong>Pricing</strong> 18%</td>
<td></td>
</tr>
<tr>
<td><strong>Risk Management</strong> 11%</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Only 7 companies reported using AI/ML models for Risk Management*

<table>
<thead>
<tr>
<th>LIFE</th>
<th>Automates</th>
<th>Augments</th>
<th>Supports</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>18%</td>
<td>55%</td>
<td>23%</td>
<td>4%</td>
</tr>
<tr>
<td>Pricing &amp; Underwriting</td>
<td>48%</td>
<td>16%</td>
<td>14%</td>
<td>22%</td>
</tr>
<tr>
<td>Risk Management*</td>
<td>60%</td>
<td>10%</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Only 7 companies reported using AI/ML models for Risk Management*
The Level of Decision-Making is Roughly Similar Between Life and Home Insurers. For Auto, More Insurer Marketing Models are Automated While Pricing & U/W Models are More Evenly Split Between Automating and Augmenting Decisions.

<table>
<thead>
<tr>
<th></th>
<th>HOME</th>
<th>AUTO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Automates</td>
<td>Augments</td>
</tr>
<tr>
<td>Marketing</td>
<td>26%</td>
<td>55%</td>
</tr>
<tr>
<td>Pricing &amp;</td>
<td>47%</td>
<td>14%</td>
</tr>
<tr>
<td>Underwriting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Third Parties Develop Over Half AI/ML Models Used by Life Insurers

Third Parties Most Commonly Used

- LexisNexis
- Milliman
- TransUnion
- Choreograph
- Acxiom
- SAS
- Google
- Census Bureau
- …

* Note: Only 7 companies reported using AI/ML models for Risk Management

DEVELOPED
INTERNALLY

- 44% Marketing
- 46% Pricing & Underwriting
- 90% Risk Management*

DEVELOPED
BY THIRD PARTY

- 56% Marketing
- 54% Pricing & Underwriting
- 10% Risk Management*

* Note: Only 7 companies reported using AI/ML models for Risk Management
Survey requested usage of these data elements:

- Credit-Based Insurance Scores
- Financial Credit Scores
- Other Types of Non-Credit Scores
- Public Records
- Demographics
- Telematics Type Data
- Driving Behavior
- Biometrics
- Medical
- Online Media
- Other Non-Traditional

MARKETING

- **Demographics** most commonly used
- **Online Media** and **Public Records** also commonly used

PRICING & UNDERWRITING

- **Medical Data** most commonly used
- **Demographics, Driving Behavior, and Credit-Based Ins Score** also highly used
Life Insurer Customer Data Collection, Disclosure and Correction

1. Non-Fair Credit Reporting Act (Non-FCRA) Data Disclosures to Consumers

Insurers were asked about their processes for informing consumers about data collection—when and how their data is used, other than what is required by law under the FCRA:

<table>
<thead>
<tr>
<th>Category</th>
<th>YES (%)</th>
<th>NO (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>37%</td>
<td>63%</td>
</tr>
<tr>
<td>Pricing &amp; Underwriting</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Risk Management</td>
<td>23%</td>
<td>77%</td>
</tr>
</tbody>
</table>

2. Consumer Opportunity to Challenge or Correct Data

Insurers were asked whether consumers have an opportunity to correct their data that is not included under the FCRA. Insurers responded similarly:

<table>
<thead>
<tr>
<th>Category</th>
<th>YES (%)</th>
<th>NO (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Pricing &amp; Underwriting</td>
<td>46%</td>
<td>54%</td>
</tr>
<tr>
<td>Risk Management</td>
<td>26%</td>
<td>74%</td>
</tr>
</tbody>
</table>
**Majority of Life Insurer AI/ML Governance Programs Include Components that Align with NAIC AI Principles**

Nearly 60% of Insurers responded about the components included in their Governance Program.

Percentage of responding insurers stating the following are included in their Governance Programs:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>53%</td>
<td>Compliance with Laws and Regulations</td>
</tr>
<tr>
<td>53%</td>
<td>Accountability for Intended / Unintended Impacts</td>
</tr>
<tr>
<td>60%</td>
<td>Resources / Knowledge to Ensure Compliance</td>
</tr>
<tr>
<td>62%</td>
<td>Transparency / Notice to Consumers About Their Data and Methods for Correction</td>
</tr>
<tr>
<td>57%</td>
<td>Assurance of Safe, Secure and Robust Systems Incl Decision Traceability</td>
</tr>
<tr>
<td>47%</td>
<td>Follow Guidance from Other Standards</td>
</tr>
</tbody>
</table>

- Actuarial Standards Board
- American Academy of Actuaries
- Colorado Dept of Insurance
- DAMA International
- Deloitte
- Federal and State Agencies
- Federal Reserve Board
- Internet Engineering Task Force (IETF)
- LexisNexis
- Microsoft
- NAIC Principles of AI
- National Institute of Standards & Technology (NIST)
- OpenID
- Society of Actuaries
- The White House
- TransUnion
Next Steps

Insights from Survey responses are used to supplement regulators’ knowledge of Life Insurer usage of AI/ML, level of decision-making, governance, data elements, and reliance on third parties to assess risk to consumers and evaluate whether any changes should be made to regulatory frameworks.

Potential Next Steps Include:

• Explore Insurer AI/ML model usage and the level of decision-making
• Evaluate the regulatory framework about the use of third-party models
• Determine whether additional white papers on best practices would be useful on subjects in the AI/ML space
• Explore the use of AI/ML at the product level
• Develop questions for company discussions in closed regulator-only sessions