

The Evolving Use of Big Data and Data Analytics: Risks and Opportunities

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Society of Actuaries Research

- Broad across Actuarial Practice Research, Experience Studies and Academic Research Programs
- International Markets focus



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Future Actuaries Education & Exams Professional Development Research Professional Sections To

International Research

On this page, you'll find links to studies, tables, reports and documents with a focus on international actuarial topics, including retirement, experience studies in multiple countries, population aging and pension plans. Materials are available for immediate download (see below).

SOA Asia-Pacific Annual Symposium

RESEARCH INSIGHTS, A SOCIETY OF ACTUARIES
SOA Asia-Pacific Ann...

00:00:00

Research Insights – International Updates

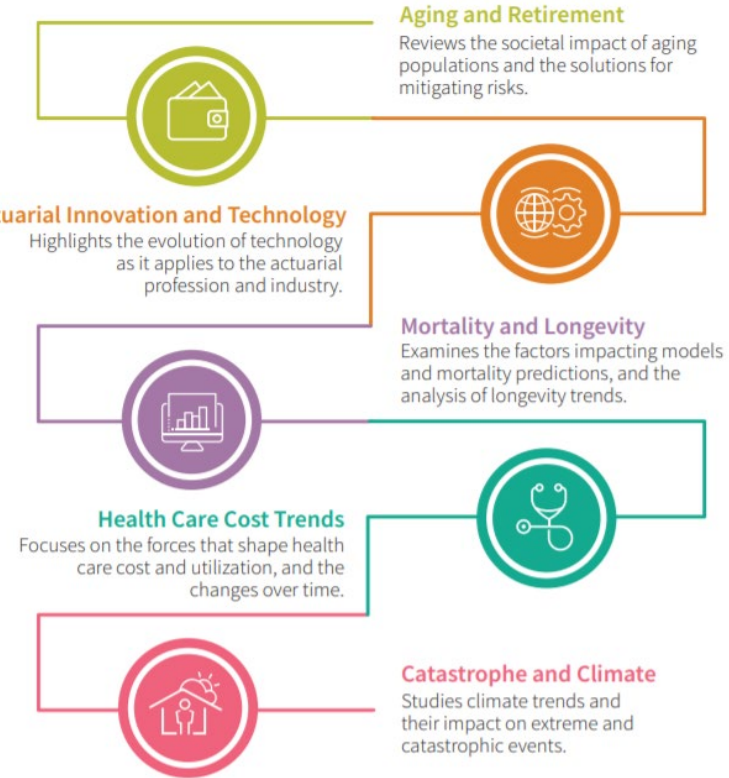
This podcast highlights international activity at the Society of Actuaries (SOA), including the Spotlight On Asia Retirement research report series.

RESEARCH INSIGHTS, A SOCIETY OF ACTUARIES
Research Insights - I...

SOA Strategic Research Programs

- Increasing SOA Research focus on programs that are important to the actuarial profession, employers and the public

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Actuarial Innovation & Technology

- Technology intersecting more than ever with the work of actuaries
- Predictive Analytics
- Cloud Computing
- Data Visualization



Use of Data Analytics is Wide and Growing in Insurance Operations

- Actuarial: Lapse and Retention analysis
- Marketing: Cross-sell and Upsell
- Communications: Media optimization
- Claims: Fraud analytics
- Underwriting: Pricing analytics

New Report on Data Analytics in Asia-Pacific

- Developed by Greater Asia Committee of SOA
- Helpful review by SOA Project Oversight Group members throughout Asia-Pacific



Data Analytics Report Highlights

- Companies see Benefits of Data Analytics
 - Higher accuracy, Quality Analysis
 - Better fit client needs
 - Right price for the right risk
 - Streamlining processes and efficiency
 - Prioritization and efficiency of fraud investigation



Data Analytics Report Highlights

- Companies see Benefits of Data Analytics
 - Improve Persistency and Upsell opportunities thru client behavior
 - Detailed Distribution channel and performance analysis
 - New data sources from digital platforms and technology
 - Increased revenue and business growth



Data Analytics Report Highlights

- Potential risks to consider

- Regulatory restrictions
- Public / client privacy concerns
- Need for large sets of data to increase accuracy
- Business decision makers need context to understand the analytics results



Data Analytics Report Highlights

- Expert Recommendations for Using Big Data:
Operational Advice
 - Competitive pressures already in the market
 - Start small... Understand... Increase
 - Get the basics correct

Data Analytics Report Highlights

- Recommendations for Using Big Data: Management and Human Resources
 - Hire the right people with the right skills
 - Management buy-in is important



Regulatory Challenges

- **Variety of market regulatory approaches**
 - Some have no specific contemplation of new technology
 - Some intentionally leave open and allow a variety of technology
- **Increasing use of algorithms and analytics puts focus on regulators / supervisors to understand company practices**
- **Monitoring and Control on technologies, a challenge to regulators if such activities are outsourced.**
- **Collaboration among supervisors, insurers and tech partners is key to success**

Future Considerations: Regulatory

- Regulatory environment to develop as analytics use increases
- Likely to have principles-based evolution of regulation rather than strict rules



Future Considerations: Inside the Company

- Insurers moving prudently to develop and monitor new uses of analytics
- Optimism that analytics can have transforming and beneficial use in insurance markets in terms of customer satisfaction, product development, lower cost, safer consumers
- Use of sophisticated modeling and technologies continue to grow.
- Consider the potential risk of implementation of data analytics practices

Potential Threats and Opportunities on Big Data Analytics



Big Data Analytics – Opportunities

- **With Big Data Analytics combined with advancement of AI and Cognitive Technologies – new trend toward managing risks using smart machine to detect, predict, prevent high risk situations**

Automation + Cognitive Computing + Big Data



Self Manage + Self Defend + Self Heal



Big Data Analytics - Opportunities

Trend Driven by:

- Massive growth of Volume of Data
- Emergence of New and advanced AI based algorithms
- Increasing pool of Data Science talents
- Adoption of behavioral analytics in risk management





Big Data Analytics - Threats

- Difficulty in implementing complex cognitive tools
- Overhyped technologies unable to deliver on promises
- Lack of trust and assurance mechanisms for AI
- Inability to source the right data
- Human backlash against automated decision-making
- Unintended consequences of mistaken predictions

Conclusion

Big Data Analytics –
Increasing use in future
with AI and Cognitive
Computing, but
Beware of Emerging risks



SOA Research

- Keep up with new concepts through the website and communications
 - <https://www.soa.org/research/trending-research/>
 - Research Insights Podcast
 - New ideas always welcome

Trending SOA Research

This page highlights the Top 10 Research items for Experience Studies and Practice Research, based on combined page views and downloads. This page will be updated quarterly.

2nd Quarter, 2019

Experience Studies

[2017 Commissioners Standard Ordinary \(CSO\) Tables](#)

[RP-2014 Mortality Tables](#)

[Experience Study: July 2013 Policy Deficiency Plans Mortality Tables](#)

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