Update on iCAS and the Coming of New Specialist Credentials

CAS Spring Meeting
Seattle, Washington
May 2016

Town Hall Panel

- The CAS Institute (iCAS) – Background
  - Bob Miccolis, CAS Board Chair and Past President
- iCAS Leadership Advisory Council
  - Bob Miccolis
  - Wayne Fisher
  - Ann Conway
- iCAS Subject Matter Experts Panel for Predictive Analytics and Data Science
  - Steve Mildenhall
  - Jim Guszcza
  - Peter Wu

Why was The CAS Institute Created?

To meet a market need for specialization

- Actuaries working in advanced analytics and data science
- Data scientists working in the insurance industry

To serve professionals in practice areas where quantitative and actuarial skills overlap

To allow the CAS to continue its focus on credentialing property and casualty actuaries

How are the CAS and The CAS Institute Different?

Casualty Actuarial Society	The CAS Institute
Independent professional society of qualified actuaries	Wholly-owned subsidiary of CAS
Premier credentialing and professional association for property and casualty (P&C) actuaries	Offers specialty credentials in selected quantitative practice areas that target both actuaries and non-actuarial professionals
For actuaries working primarily in the P&C insurance and risk management sector	Will span multiple sectors, starting with insurance and risk management, but able to expand into other sectors

What is The CAS Institute?

- Provides credentialing and professional education to quantitative specialists in selected areas, such as:

Predictive Analytics / Data Science

Catastrophe Modeling

Capital Modeling / ORSA analysis

Quantitative Reinsurance Analysis

Other analytics and quantitative specialties

Why a credential for Predictive Analytics? Shouldn't all actuaries be specialists in this field?

Big Data & Analytics

Data Science

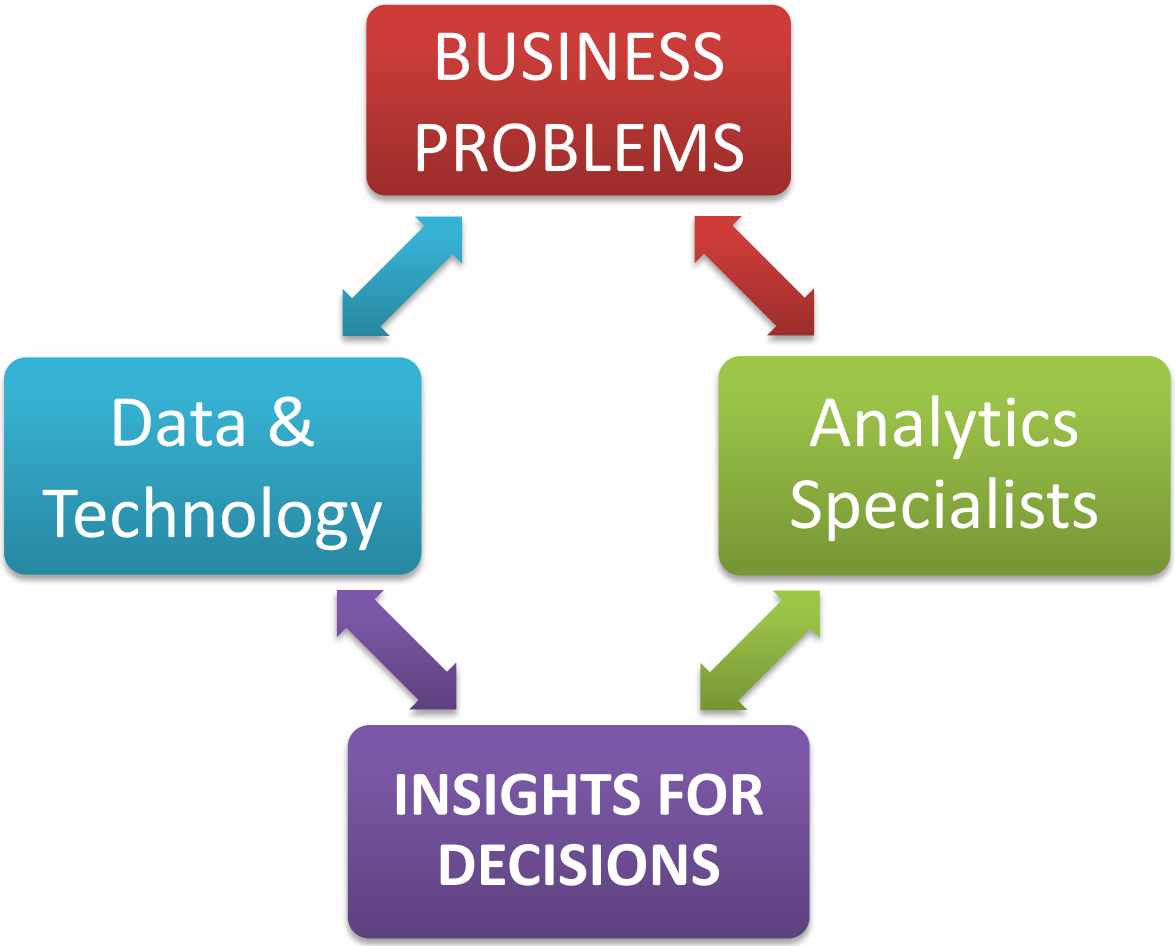
Business Intelligence

Predictive Analytics

Statistics

Actuarial

What does predictive analytics and data science mean for professionals in the insurance and risk management fields?



What Value will The CAS Institute Credentials Provide to Candidates?

- Provides recognition of expert knowledge.
- Demonstrates knowledge of practical applications.
- Sets candidates apart from others.
- Enhances skills.
- Provides opportunities for additional job duties.
- Helps candidates advance their careers.
- Provides a community for professionals.

How will the CAS Institute Credentialing Process Work?

Candidates will follow a relevant course of study, including self-study programs that meet specified learning objectives.

- Knowledge and competency assessments will include examinations, and a project.
- Possibly grant waivers for previously completed academic courses, academic degrees, professional technical papers, or other evidence of practical specialized knowledge and experience.

How Will the CAS Institute Ensure the Quality of its Credentials?

Oversight by an expert panel of industry specialists and thought leaders in each practice area.

- Establish eligibility requirements
- Create the curriculum
- Direct development of educational materials
- Set competency levels
- Oversee high-quality examination
- Establish experienced practitioner pathway

The CAS Institute – Recent Questions

What is the expected difficulty, rigor, and time commitment vs. CAS exams?

- Not as extensive as actuarial requirements
- Deeper in certain specialized quantitative skills
- Manageable modular approach for learning additional skills
- Less time to complete than for ACAS or FCAS
- Less of a commitment than for a Masters or PhD

The CAS Institute – Recent Questions

- What is the timeline for iCAS?
- When will the first courses and exams be offered?

Summer 2016	**Learning objectives for data science and predictive analytics**	**Assessment/evaluation methods for learning objectives**
Fall 2016	**Experienced Practitioner Pathway**	**Syllabus, study material and dates for 1st exam**
2017	**Syllabus, study material and dates for remaining exams**	

The CAS Institute – Recent Questions

What have been the reactions to the announcement of The CAS Institute?

- Market research shows support and interest from both employers and potential credential holders.
- Very positive comments among CAS members.
- Inquiries and interest from outside the actuarial profession.

The CAS Institute – Recent Questions

How will the experienced practitioner process work? Will candidates need to have a published work?

- Will not require having published work. However, published work would demonstrate experience.
- Requirements for experienced practitioners to earn the credential are under development.

Strategic Alliance

The Institutes®

Insurance and Risk Management Professionals Education in Big Data Analytics Applications

THE INSTITUTES

Business Applications
of Data Analytics
to Insurance Risk

THE CAS INSTITUTE

Actuaries / Specialists
Insurance & Risk
Data Science / Analytics

ACADEMIC DISCIPLINES

PhD Statisticians
Computer Science
Data Science

How will iCAS be working with The Institutes?

CAS will join forces with The Institutes to accelerate the delivery of iCAS programs

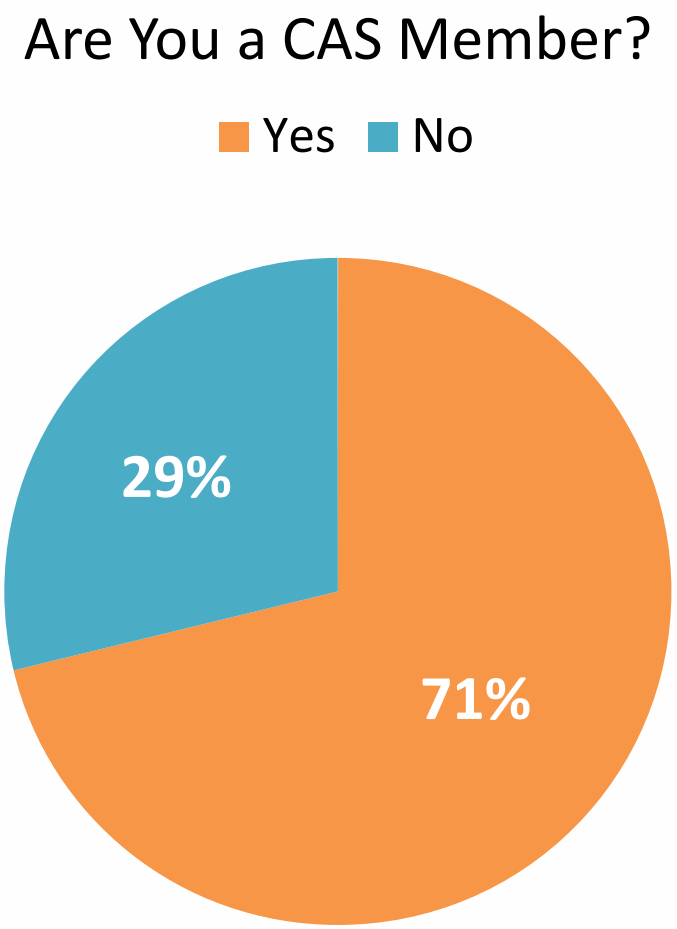
- Study material and exams for specialists
- State-of-the-art methods for testing and grading

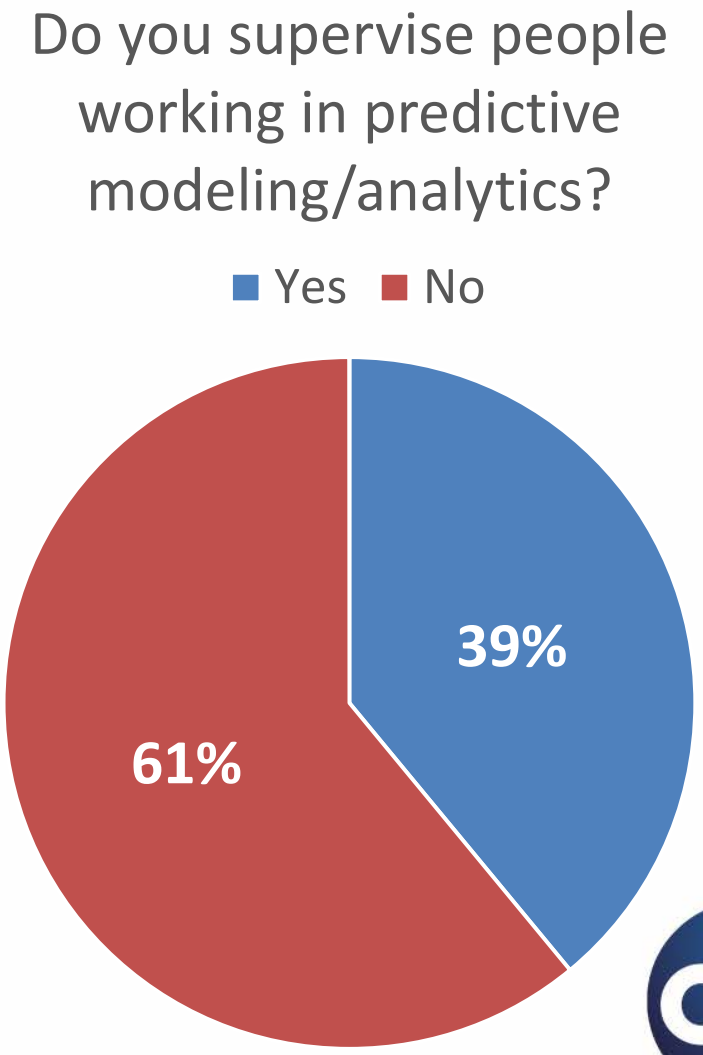
Relationship will enable complementary offerings for professional education to the insurance industry

- Application of data analytics to industry problems
- Collaboration among actuaries, underwriters, risk, claims and other professionals

Market Survey Results

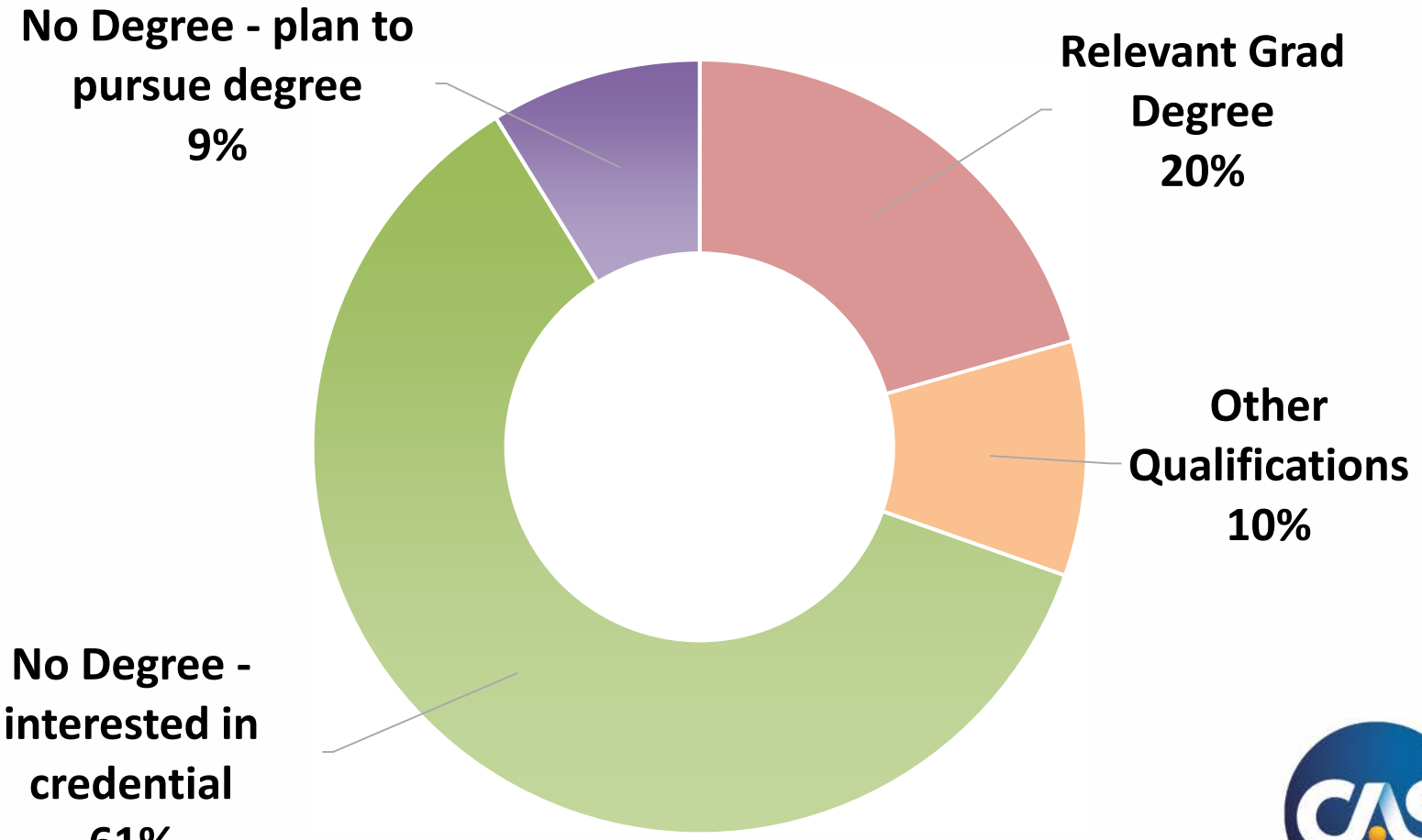
Survey Demographics



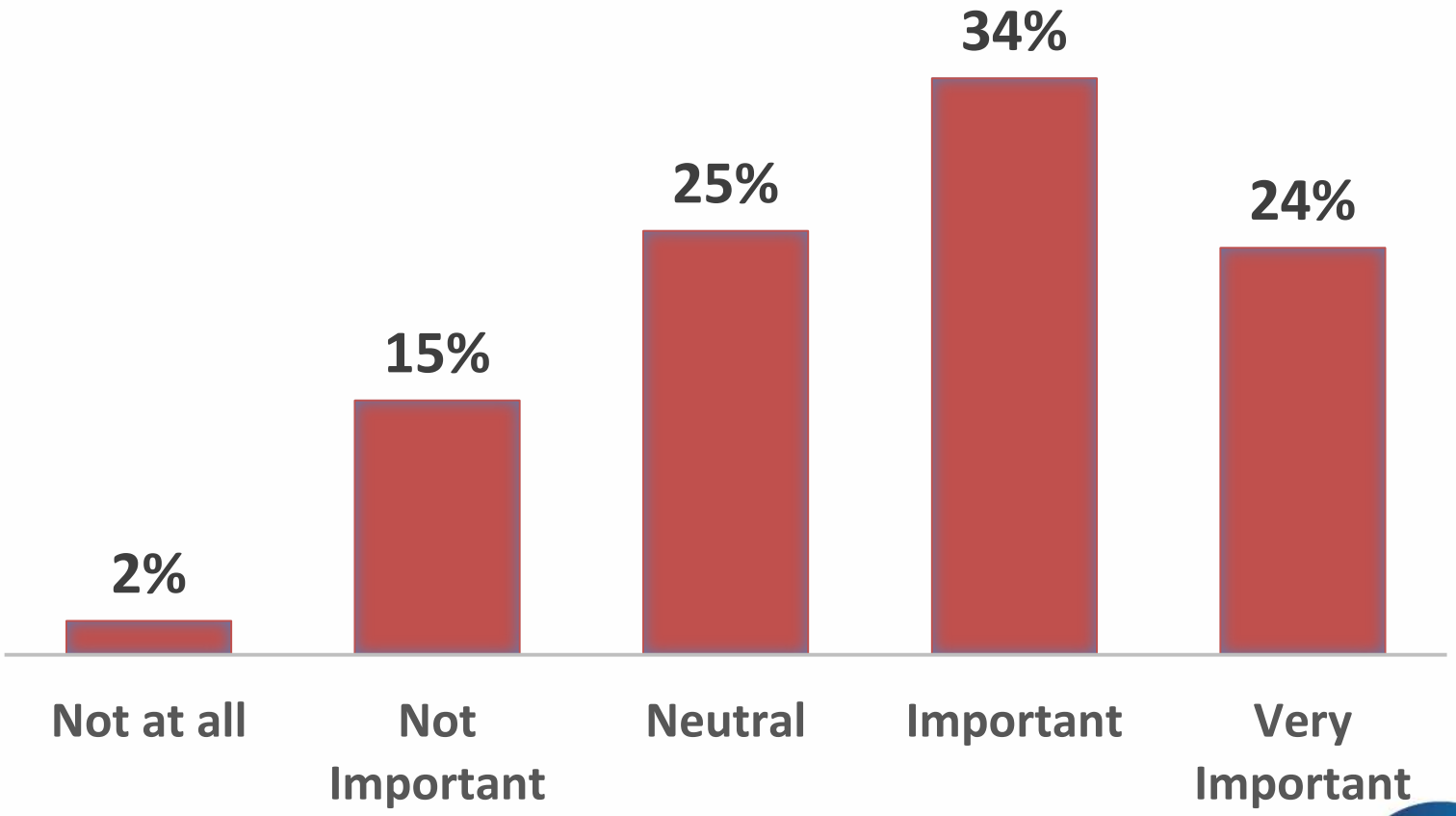


Survey Demographics

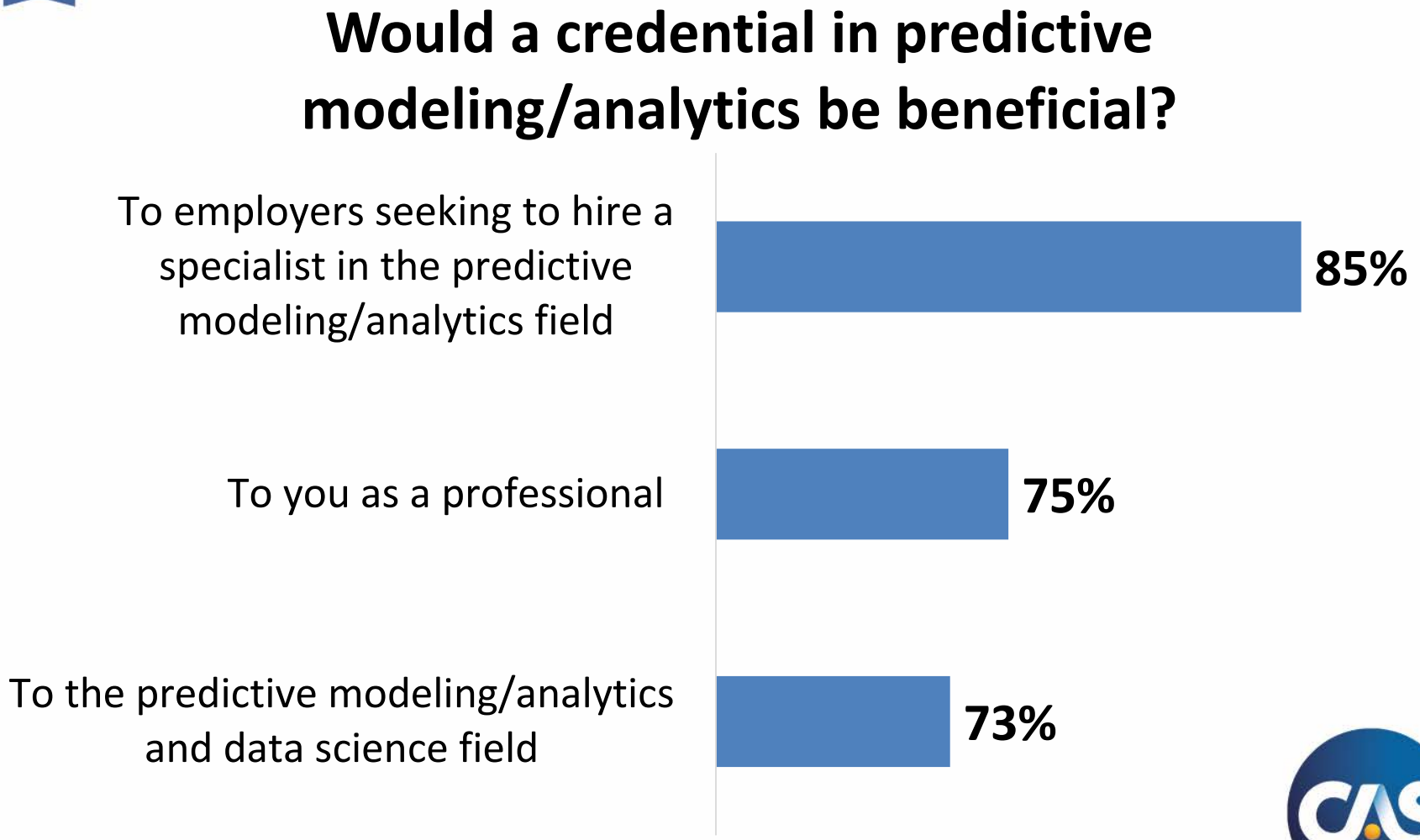
Describe Your Relevant Qualifications



Supervisors: Importance of Predictive Modeling/Analytics Skills for Actuaries



Value of a Certified Specialist Credential



Value of a Certified Specialist Credential

Supervisors

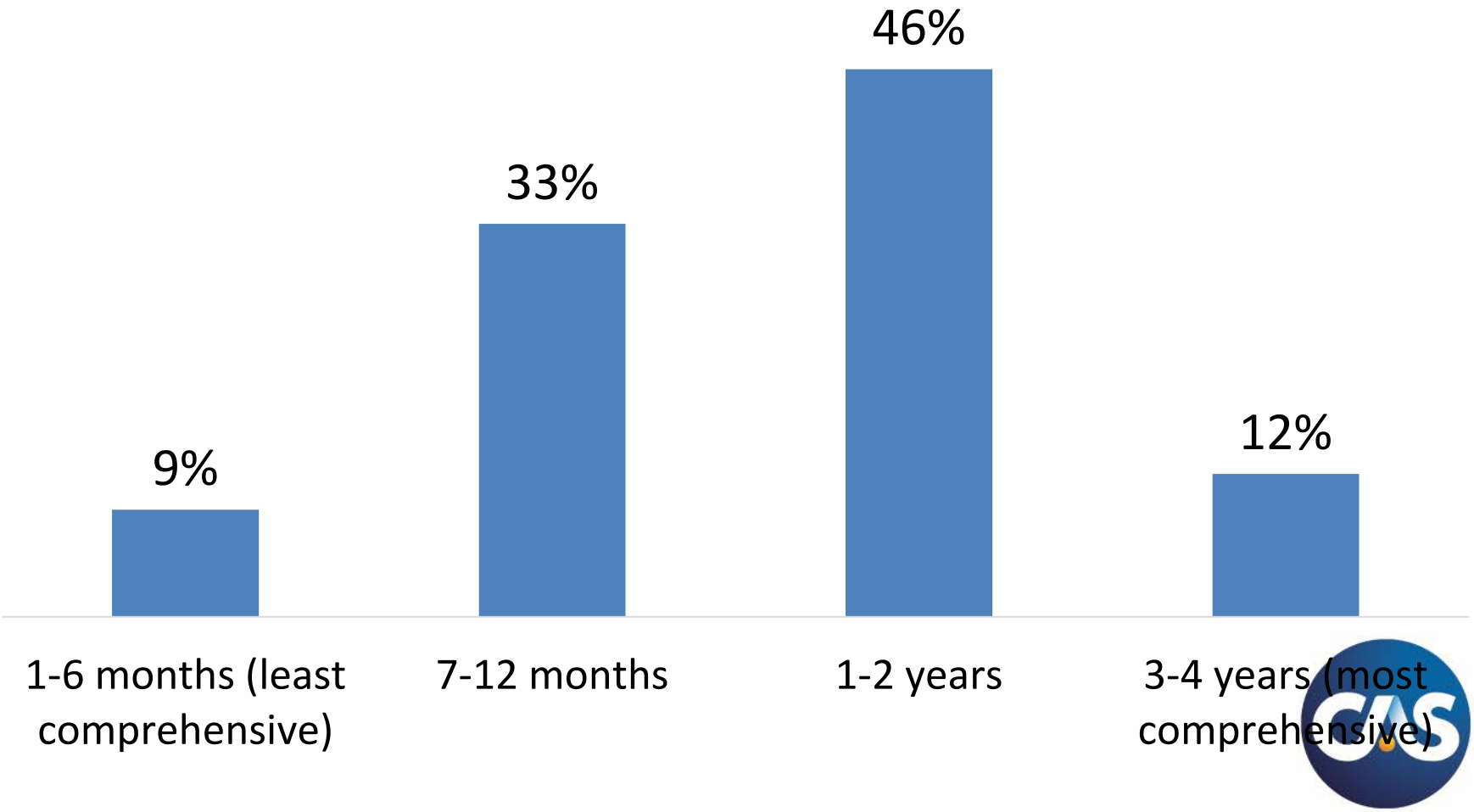
Would a credential in predictive modeling/analytics be beneficial?

Credential Considerations-- Supervisors

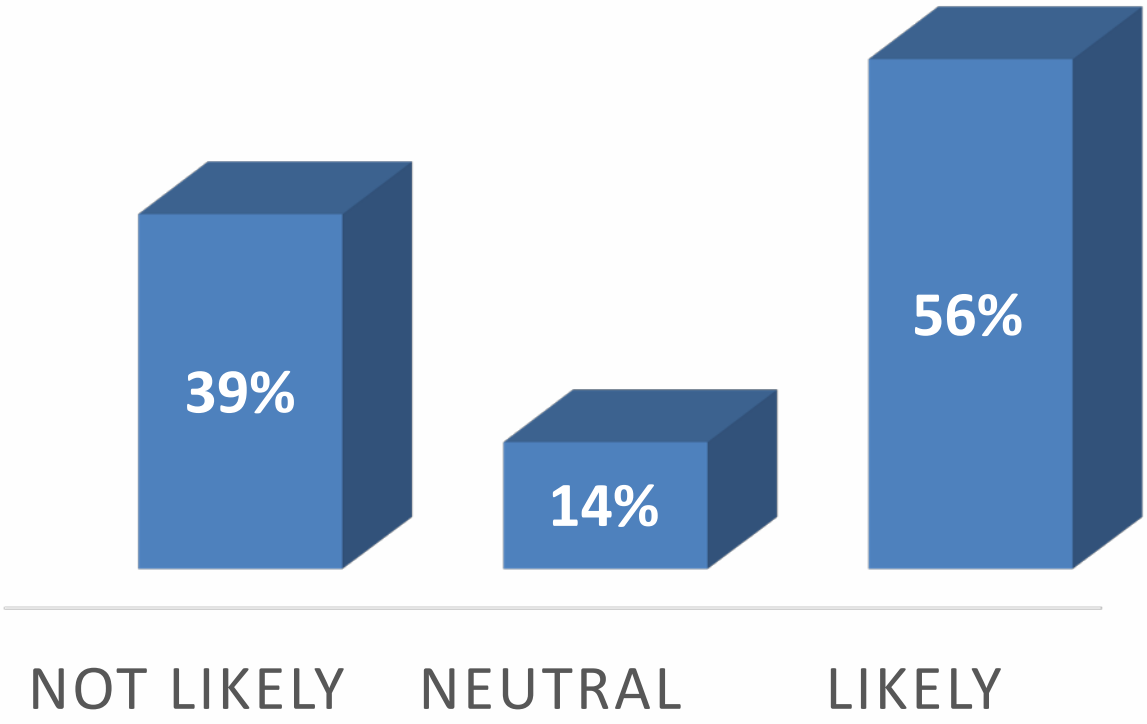
Considerations important to encourage employees to pursue a credential as a certified specialist?	Percent
Scope and depth of the subjects	91%
Reputation of the organization	86%
Recognized expertise of certified specialists	84%
Total time commitment	77%
Recognition of credential by employers	74%
Willingness of employer to cover the costs	67%

Credential Considerations

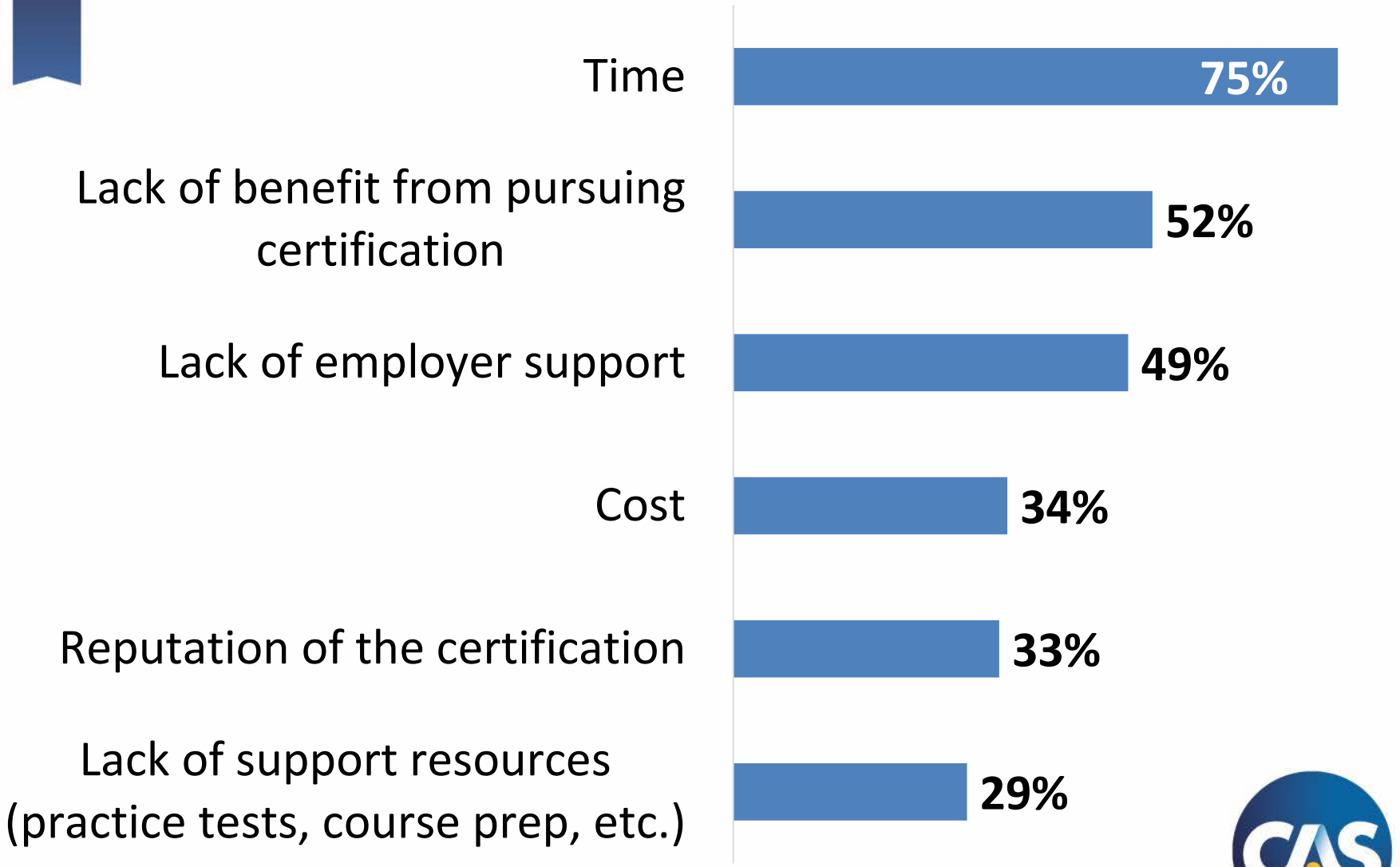
How much time would you devote to become a certified specialist in predictive modeling/analytics?



Likelihood to Pursue Earning a Credential



Barriers to Participation



Credential Considerations

Requirements to earn a certified specialist credential in predictive modeling/analytics?	Percent
Assessment using software to analyze a realistic data set and build and validate a model using that data set	77%
A course on one or more software applications (e.g., R, Python, SQL)	73%
Exams (multiple choice, short answer, solve quantitative problems using standard spreadsheet)	60%
Online courses with assessments	60%
A predictive modeling/analytics project	44%

Development of Requirements for New Credential in Predictive Modeling/Analytics

Discussion of
CURRENT WORK IN PROGRESS

Requirements: 4 Parts

Knowledge Assessment/Validation

- PART A: Domain Knowledge – Insurance Principles (P&C)
  - Extracts from CAS Modules 1 & 2
  - Extracts from Intro to Ratemaking/ Reserving (CAS Exam 5)
- PART B: Data Concepts, Tools and Visualization
- PART C: Predictive Modeling – Methods & Techniques
- PART D: Project in Predictive Modeling Application
  - Not an exam or online module
  - Individual Project
  - Project Advisor
  - Project Review Panel

Delivery of Assessments/Validation

- PART A: Domain Knowledge – Insurance Principles (P&C)
  - One Online Module – similar to CAS 1 & 2
  - Exam through The Institutes (multiple choice, short answer)
- PART B: Data Concepts, Tools and Visualization
  - Computer-Based exam – ability to use software and program
- PART C: Predictive Modeling – Methods & Techniques
  - Computer-Based exam – ability to use software and program
- PART D: Project in Predictive Modeling Application
  - Project proposal…Project Approval…Project Submission
  - Possibly Use an Online Project Site for each project

iCAS Communities

- Membership in The CAS Institute
  - Inclusive approach vs. limited to those with credentials?
- Professionalism & Ethics
  - Ethics vs. Code of Conduct?
  - Discipline?
  - Standards?
- Keeping Current as a Certified Specialist
  - Continuing Education?
  - Continued Professional Development?
  - Re-Certification?

Questions and Discussion