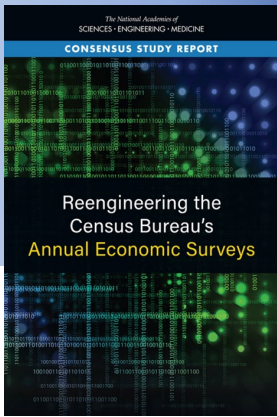


Annual Integrated Economic Survey (AIES) Update


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Quick Refresher





- National Academy of Sciences (NAS) recommended changes to our annual economic programs
- Main drivers of this effort include:

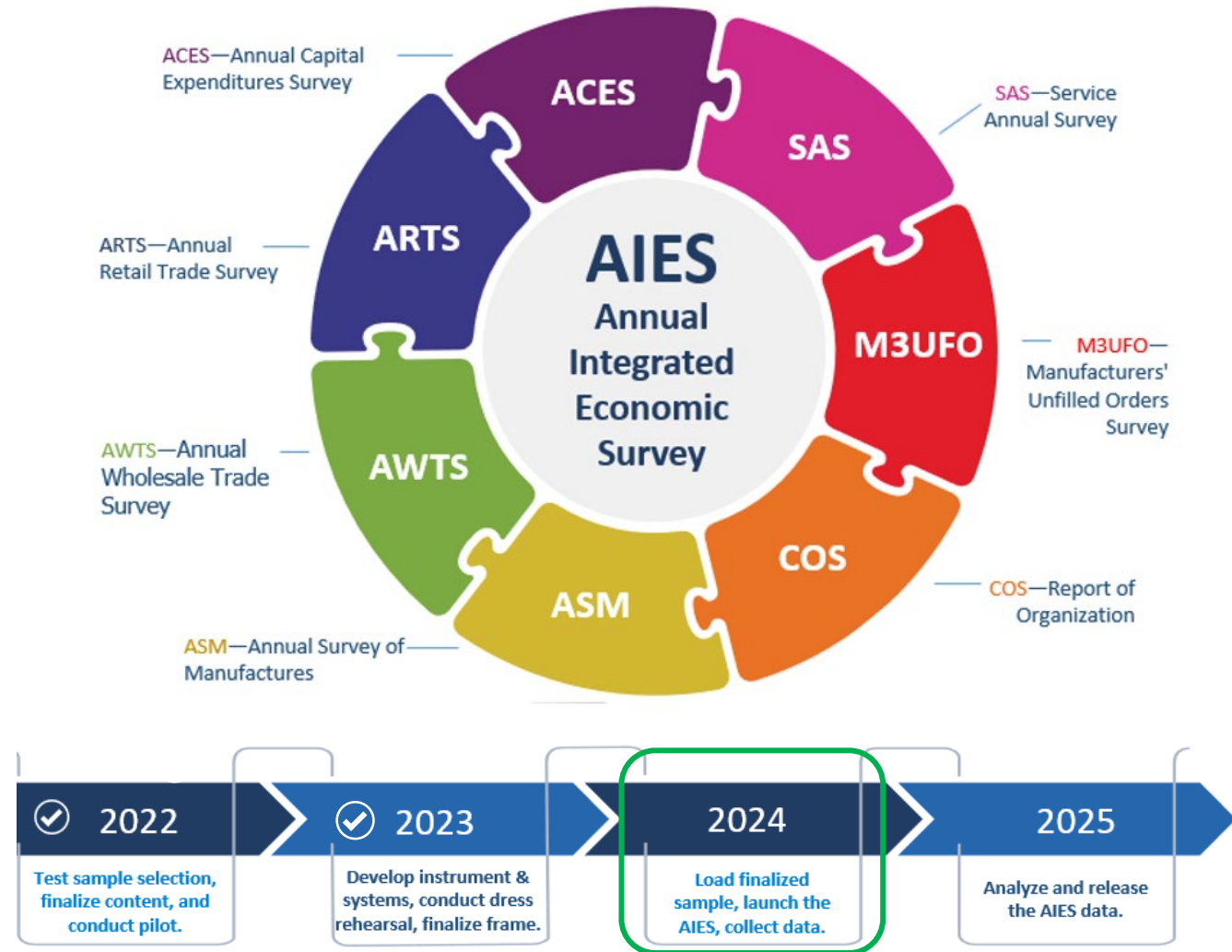
 Meet data needs—timely, granular, standardized

 Declining budgets

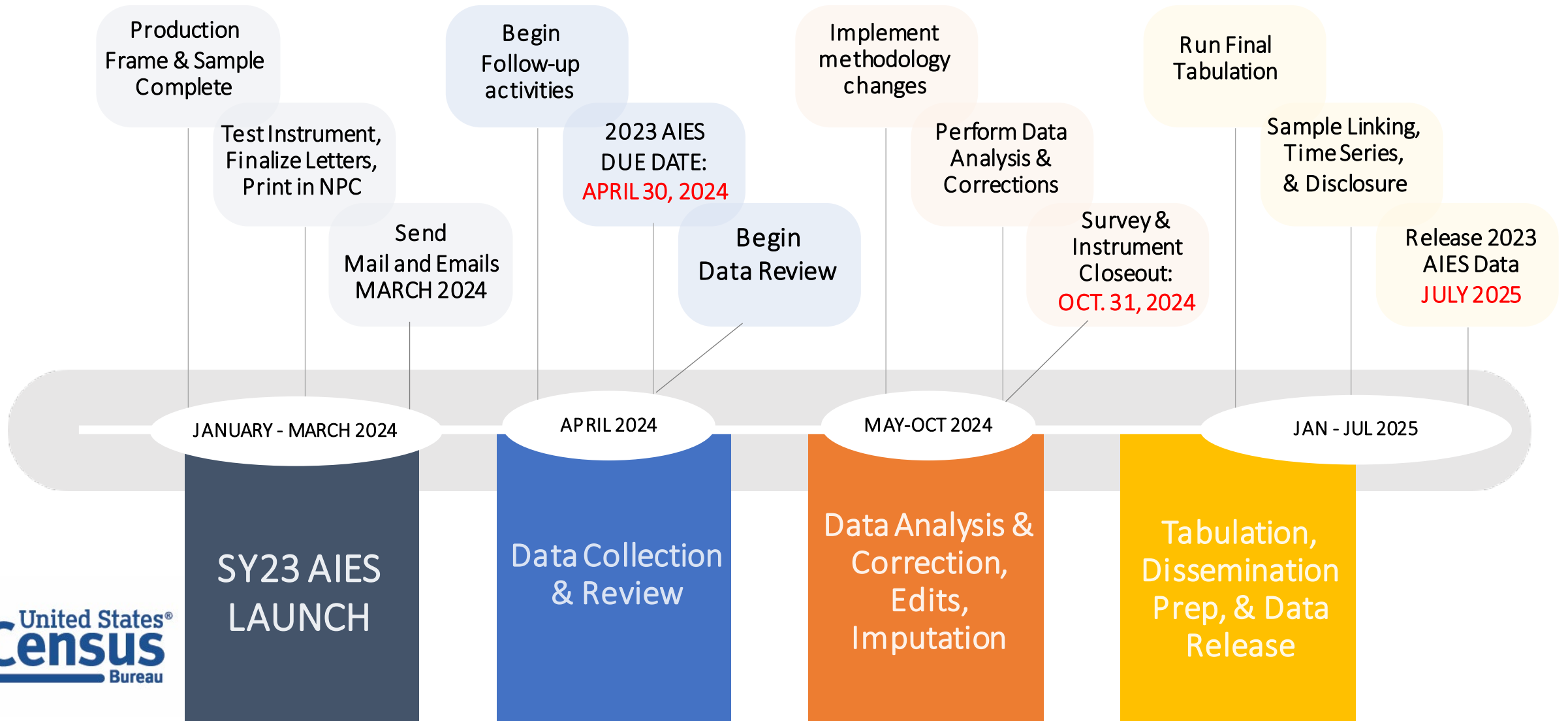
 Improve efficiency—consistency across programs (content, processes, systems)

 Declining response rates

 Stay relevant



2023 AIES Roadmap



AIES NAICS Coverage

AIES includes coverage of the following NAICS sectors of the U.S economy:

| | |
|--|--|
| 11: Agriculture, Forestry, Fishing and Hunting* | 52: Finance and Insurance* |
| 21: Mining, Quarrying, and Oil and Gas Extraction | 53: Real Estate and Rental and Leasing |
| 22: Utilities | 54: Professional, Scientific, and Technical |
| 23: Construction | 55: Management of Companies and Enterprises |
| 31-33: Manufacturing | 56: Administrative and Support, and Waste Management and Remediation |
| 42: Wholesale Trade | 61: Educational Services |
| 44-45: Retail Trade | 62: Health Care and Social Assistance |
| 48-49: Transportation and Warehousing* | 71: Arts, Entertainment, and Recreation |
| 51: Information | 72: Accommodations and Food Services |
| 81: Other Services (except Public Administration)* | |

* Denotes certain industries are out-of-scope

Expanded NAICS coverage for:

| | |
|--|--|
| 113: Forestry and Logging | 6111: Elementary and Secondary Schools |
| 114: Fishing, Hunting and Trapping | 6112: Junior Colleges |
| 115: Support Activities for Agriculture and Forestry | 6113: Colleges, Universities, and Professional Schools |
| 21: Mining, Quarrying, and Oil and Gas Extraction | 8131: Religious Organizations |
| 23: Construction | 81393 – Labor Unions and Similar Labor Organizations |
| 482: Rail Transportation | 81394: Political Organizations |
| 55: Management of Companies and Enterprises | |

Additional data items available for expanded industries:

| | |
|------------|--------------------------|
| Revenue | First Quarter Payroll |
| Employment | Total Operating Expenses |
| Payroll | Capital Expenditures |

Program Modernization

Where We've Been

Industry focused

Overlapping content

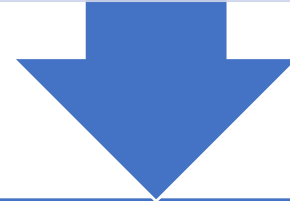
National estimates

Independent samples

Different reporting units by program

Inefficient processes and operations

Varying classification systems



Where We're Going

Respondent centric

Alignment to enterprise programs

Consolidated processing systems

Coordinated collection and instruments

Standardized and rotating content

Integrated frame and sample

Leveraging alternative data

Holistic company analysis

Economy-wide data products

Respondent Centric Research & Testing

| | Phase I Pilot | Phase II Pilot | 2022 AIES (Phase III) | Usability Testing |
|--------------|--|---|---|--|
| Timeline: | Mailed: March 21, 2022 Due Date: June 15, 2022 Closeout: Sept 2022 | Mailed: Feb 22, 2023 Due Date: April 17, 2023 Closeout: Sept 2023 | Mailed: Sept 7, 2023 Due Date: Oct 17, 2023 Closeout: Dec 2023 | Start: Sept 27, 2023 Finish: Nov 30, 2023 |
| Sample Size: | 78 companies | 868 companies | ~8,200 companies | Up to 30 in-person interviews |
| Goals: | <ul style="list-style-type: none"> Test that companies could report data for the questions we were asking | <ul style="list-style-type: none"> Test all collection units in one survey More accurate measures of burden | <ul style="list-style-type: none"> Evaluate instrument performance More insight on burden Maximize enterprise partnerships | <ul style="list-style-type: none"> Test design of new survey instrument to gather first impressions |

Alignment to Enterprise Programs

Infrastructure Modernization

Migration to cloud

Prioritizing cloud computing to improve system accessibility and scalability, aligning with organizational growth and digital transformation goals

EDL

(Enterprise Data Lake)

Cloud-based enterprise solution to replace current Census hardware platforms for survey operations, research analytics, processing, data product creation and innovation, data dissemination, and archiving

DICE

(Data Ingest and Collection for the Enterprise)

Manages and integrates enterprise systems and services

Shared platform for receiving external data and conducting census/surveys cost-effectively

CEDSCI

(Center for Enterprise Dissemination Services and Consumer Innovation)

Enterprise-wide data dissemination vehicle aimed at housing Census's vast library of data products into one source

Replaced American FactFinder (AFF) in 2020

MDR

(Metadata Repository)

Central repository of survey metadata

Integrated Frame & Sample

Initial Frame & Sample

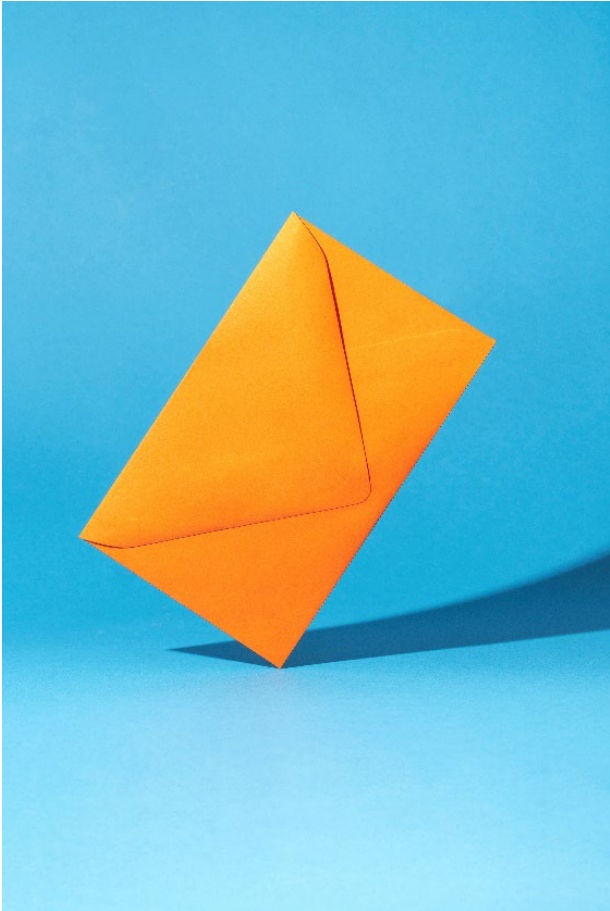
Production frame extracted at the end of 2023 including updates from the 2022 Economic Census

Production sample finalized in January of 2024

- Sample included over 370,000 companies, which accounts for over two million establishments.
- Sample reselected every 2-3 years
- Implemented sub-sample for the Manufacturing sector to reduce burden

Integrated Frame & Sample

AIES Launch



| Mailed | # Companies | # Establishments |
|--------------|----------------|------------------|
| Multi-units | 99,860 | 1,832,638 |
| Single-units | 272,929 | 272,929 |
| Total | 372,789 | 2,105,567 |

- Mailed initial letters to multi-unit and single-unit companies with information to respond starting March 15th
- Sent emails to over 260,000 companies.

Consolidated Processing Systems

New Econ Systems/Tools

CEDR

(Central Enterprise Data Repository)

Repository for all reported data from economic programs

Hub for accessing existing datasets, fostering new data products and identifying data gaps

SPACE

(Standardized Processing and Analyst Correction Environment)

SPACE encompasses all of the individual processing databases

AIES is first, others to follow over next several years

SPACE-UI

(SPACE – User Interface)

Interactive user interface for making data corrections

QFLOW

(Q-based Expert System)

Modular infrastructure that manages the data (edits, imputation, estimation, tabulation, etc.)

AIR

(Analyst Intelligence Resource)

Tableau tool offering real-time analytical view of data at macro & company levels with drill-down capability to micro levels

MPS

(Macro Processing System)

Function-based, parameter driven macro system

Written in Python

Minimizes duplication of coding

Consolidated Processing Systems

Editing & Imputation

Innovative Editing and Imputation Procedures

- Developed editing and imputation methodologies built off of best prior practices for handling missing or inconsistent data

Standardized Common Practices

- Where possible, adopted standardized editing and imputation practices across all trades, ensuring consistency

Modernizing Techniques

- Integrate cutting-edge technology to modernize data editing processes and consolidated workflows
- Modular-design intended to ease the burden of integrating other programs moving forward

Holistic Data Analysis

New Approach to Data Review

Macro-Down Perspective

- Shift focus from micro-level to macro-level
- Identify overarching trends and patterns instead of getting lost in individual records

Introducing Company Analysts

- In addition to traditional industry analysts, appoint dedicated analysts to evaluate companies in their entirety, considering all relevant factors
- Aim is to improve the understanding and impact of larger companies on published data products

Adopting New Tools and Processes

- Leverage advanced data analytical tools to enhance efficiency
- Streamline processes to facilitate quicker and more accurate data analysis

Macro Processing

Tabulations & Disclosure

Tabulations will be fully metadata-driven

- Provides a new way to create custom tables more efficiently

Unified Disclosure Methodology

- Implementing a single disclosure methodology (cell suppression) across all trades and all data tables

Streamlined Publication Levels

- Optimized and simplified data publication levels where possible

Economy-Wide Data Products

New Features

Geographic data

- Subnational data for all trades for the first time

Quality measures provided for all published cells

- No automatic quality suppressions on data

Estimates displayed in thousands of dollars

Economy-Wide Data Products

Data Products

Publication Outline

- Two Application Programming Interfaces (API)
- Core data multi-sector and NAPCS tables on data.census.gov
- CSV tables available on AIES website
- Ingest of AIES data in Federal Reserve Economic Data (FRED)
- Data visualizations
- Begin releasing data in July 2025



Economy-Wide Data Products

Data Visualizations

- Main interactive Tableau dashboard
- Rotating visualizations
- Dynamic one-time products
- Industry-specific data products

AIES Time Series

AIES introduces need for substantial time series operations

- Updating all time series to a 2017 NAICS basis
- Changing methodology to have all estimates measure employer only firms
- Benchmarking to 2017/2022 Economic Census
- Linking historic annual time series to the new sample

AIES Time Series

NAICS Timeline

| Survey/Sector | Current State 2022 Survey Year Data | 2023 AIES* (Summer 2025) | 2025 AIES |
|-------------------------|--|-----------------------------|------------|
| ASM/M3UFO/Manufacturing | 2017 NAICS** | 2017 NAICS | 2022 NAICS |
| ARTS/Retail | 2012 NAICS | 2017 NAICS | 2022 NAICS |
| SAS/Services | 2012 NAICS | 2017 NAICS | 2022 NAICS |
| AWTS/Wholesale | 2012 NAICS | 2017 NAICS | 2022 NAICS |

* 2023 AIES release includes benchmarking to the 2022 Econ Census (2017 NAICS)

** ASM is not released in the Economic Census year, 2021 ASM data on 2017 NAICS basis

AIES Collection Update

As of June 4, 2024:

| Total Mailed | Total CKIN | Total CKIN % | SU Mailed | SU CKIN | SU CKIN % | MU Mailed | MU CKIN | MU CKIN % |
|--------------|------------|--------------|-----------|---------|-----------|-----------|---------|-----------|
| 372,789 | 158,070 | 42.40% | 272,929 | 113,354 | 41.60% | 99,860 | 44,536 | 44.60% |

| | Days Past Mailout: 80 | | | | | | | |
|-----------------|-----------------------|-----------|-----------|-----------|----------|--------------|-------------|---------|
| Survey | AIES SY23 | ARTS SY22 | AWTS SY22 | ACES SY22 | SAS SY22 | COS/ASM SY21 | M3-UFO SY22 | EC SY22 |
| Due date | 4/30/24 | 3/21/23 | 2/22/23 | 4/25/23 | 3/21/23 | 3/10/22 | 5/18/23 | 3/15/23 |
| Check-In % | 42% | 43% | 53% | 43% | 38% | 43% | 53% | 37% |
| Access Survey % | 62% | 52% | 61% | 50% | 49% | 57% | 58% | 56% |

Future Initiatives/Objectives

Finding optimal balance between collecting useful and relevant content and mitigating response burden

- Stakeholder discussions are underway
- Rotating modules AND rotating content
- Need to make way for more relevant economic questions/topics (AI, ocean economy, etc.)

Developing adaptive collection strategies

- Subsampling small and medium respondents
- Incorporating modeling techniques
- Utilizing alternative data sources

Future Initiatives/Objectives

Incorporating research, paradata, and respondent feedback into improvements for the 2024 instrument

Integration of AIES and the Economic Census?

- How will these two programs complement each other moving forward?
- What is the long-term vision for these two programs?
- Working group has been commissioned

Questions / Information

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