

Ch3. Auditing and Digitalization

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What is Audit Data Analytics (ADA)?

Definition: Audit data analytics (ADA) refers to the process of using technology, such as data analysis tools and techniques, to evaluate and analyze large volumes of data related to an entity's financial transactions, operations, and controls during an audit.

The **purpose** of ADA is to enhance the effectiveness and efficiency of the audit process by helping auditors identify risks, anomalies, trends, and patterns that may indicate potential misstatements, fraud, or control weaknesses.

What is Audit Data Analytics (ADA)?

Some **examples** of audit data analytics techniques include:

- **Descriptive analytics:** Summarizing and visualizing data to understand the underlying patterns, trends, and relationships.
- **Diagnostic analytics:** Analyzing past data to determine the root causes of specific issues or anomalies.
- **Predictive analytics:** Using statistical models and algorithms to forecast future events or trends based on historical data.
- **Prescriptive analytics:** Recommending actions to optimize outcomes based on data analysis.

What is Audit Data Analytics (ADA)?

Some concrete examples with the type of **ADA tool** in Norwegian companies:

- **Excel with basic functionality** is used as an ADA tool the representing 34.4 percent of the total.
- More **advanced Excel** (including Power-BI, Solver, Miner, and Macros) is used the 25.9 percent of the total.
- More sophisticated software with capacity to handle Big Data is used less.
- **Statistical packages** (e.g., R, Stata, SPSS); **programming languages** (e.g., Python and Pearl), and **visualization programs** (e.g., Tableau and Spotfire) are used 2.7 percent, 2.2 percent, and 10.6 percent of the total times, respectively.
- **“Other” ADA tools** (8.1 percent of the total) include firm specific tools—PACE (EY), Halo (PwC), KAAP (KPMG), and Spotlight (Deloitte). According to the firm Heads these tools include some of the tools described above.

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According with Eilifsen et al. (2020), proponents of the use of ADA cite three potential **benefits from their use**:

1. Improved understanding of an entity's operations and associated risks, including the risk of fraud;
2. increased potential for detecting material misstatements;
3. and improved communications with those charged with governance of audited entities.

Motivation:

Recently, the major international public accounting firms have invested heavily to advance their audit technology and moved to leverage the use of **audit data analytics (ADA)** for financial statement audits (Deloitte 2016; KPMG 2016; PwC 2017; EY 2017).

The adoption of ADA, as it is presented in the previous section, it is due to the fact that it could introduce some **important advantages** in the auditing system.

Methodology: The authors apply a two-stage research approach.

1. They **interviewed** the heads of professional practice (“Heads”) of five international public accounting firms in Norway to get an understanding of the status of ADA in each firm.
2. They obtained responses to a **detailed questionnaire** from a large sample of 216 partners and managers who were in charge of 109 audit engagements about (1) their perceptions and insights on issues related to ADA and (2) extensive information on the actual use of ADA in those 109 engagements.

Results:

1. The Heads indicated that their firms do not require mandatory use of “advanced” ADA tools. This seems to be driven by the uncertainty about how the supervisory inspection authorities will evaluate and accept ADA generated audit evidence.
2. While ADA use is high on the firms’ agenda and there is a global firm push for ADA to be used on audit engagements, actual use is limited in our sample, including even the audits that were identified by the Heads as expected to use ADA.
3. Based on our discussions with the Heads, the firms differ in their strategies in how they implement the use of ADA in their organizations from, at one end of the spectrum, a “wait and see” approach to, at the other end of the spectrum, centralization of ADA functions and significant firm involvement to facilitate ADA use.

Results:

4. The partners and managers indicated that their knowledge and training with firm available ADA tools were sufficient to permit their use of ADA and their attitudes toward ADA usefulness are more positive for firm audits in general than for the sampled audit engagements.
5. As expected, more ADA are used on engagements where the client has an integrated ERP/IT system.
6. There is a higher frequency of ADA use on new audit engagements. Participants indicated that recent tender offers specifically asked about firms' use of new technology and ADA in audits, and that the audit firms promoted ADA use in the tender process.

Results:

7. The authors identify the various phases of the audit where ADA are used.
 - ▶ In the **audit planning phase**, ADA are used for overall assessment of the client's operations and performance, identifying and assessing key risks, and mapping of different business processes.
 - ▶ In the **substantive testing phase**, ADA are used for journal entry testing, calculating sample-size, selection of random samples, and summarizing ledgers.
 - ▶ In the **completion phase of the audit**, ADA are primarily used for reconciliation and control between final accounts and underlying ledgers, analytical procedures, and final review of financial statements.
 - ▶ In **summary**, the results of the authors suggest that the use of ADA within the firms is limited and at an early stage of implementation.