EPISODE 01 OF 4

EXPERIENCE STUDY — A GLOBAL ACTUARIAL PRACTICE

What Is an Experience Study?

Purpose, Scope & Regulatory Context

EXPERIENCE STUDY OVERVIEW | ASSUMPTION SETTING | IFRS 17 | OJK / PSAK 117

01

Why Does This Matter?

EPISODE 01 — FOUNDATION

> *Pricing that drifts too far from actual experience erodes underwriting margins; reserving assumptions that lag behind real-world trends can* **mask deterioration until it surfaces as a sudden earnings hit.**
>
> InsuranceBrain.com, 2024 · Global Actuarial Practice Reference

IFRS 17

GLOBAL STANDARD

Requires current estimates based on up-to-date assumptions — effective worldwide since 2023

Solvency II

EU / ORSA

Mandates regular assumption review as part of Own Risk & Solvency Assessment — at least annually

Drift Risk

FINANCIAL & REGULATORY

Mispriced products, inadequate reserves, regulatory scrutiny, and sudden earnings shocks

Experience study is the actuarial feedback loop that keeps assumptions grounded in reality — required under IFRS 17, Solvency II, and local regulatory frameworks worldwide.

ACTUARIAL FUNDAMENTALS

The Core Definition

What Experience Study Really Means

THE SYSTEMATIC PROCESS

A structured comparison of **actual insurance outcomes** against the assumptions used at product launch — conducted over a defined **observation period of typically 3 to 5 years** to detect drift and validate assumptions.

WHAT IT COVERS

Five core assumption types across life, health, and general insurance: **mortality rates, lapse rates, expense levels, morbidity incidence,** and **investment returns** — compared against assumed values used in pricing, reserving, and embedded value.

OUTPUTS: Pricing | Reserving | IFRS 17 | Embedded Value | ALM & Reinsurance

> *Every major insurance market relies on experience analysis to keep pricing, reserving, and embedded value assumptions grounded in reality — not in outdated projections.*
>
> — INSURANCEBRAIN.COM, 2024

EXPERIENCE STUDY — EPISODE 01

What Gets Studied?

Four core assumption types reviewed in life & health insurance experience studies worldwide

Mortality
A/E VS. TABLE

Key Metric: **Actual deaths ÷ Expected deaths from mortality table**

Compares actual deaths to expected rates from CMI (UK), SOA (US), or TMI (Indonesia) tables to assess whether pricing assumptions remain adequate.

Lapse
DISCONTINUANCE RATE

Key Metric: **Policy year lapse rate by cohort and duration**

Tracks how many policyholders exit each policy year, directly affecting reserve adequacy, profit emergence, and long-term business projections.

Expense
UNIT COST

Key Metric: **Actual unit cost per policy or transaction**

Measures actual administration cost per policy against budgeted unit expenses to control operational efficiency and validate IFRS 17 cash flow assumptions.

Morbidity
CLAIM INCIDENCE

Key Metric: **Health claim incidence rate vs. expected**

Monitors frequency of health claims versus expected incidence rates to validate assumptions underlying medical, critical illness, and disability products.

Global Standard: These four assumption types are the primary focus of experience studies across all major insurance markets — UK, US, Australia, Singapore, Indonesia, and beyond. Each feeds directly into actuarial assumption setting and regulatory reporting.

GLOBAL ACTUARIAL PRACTICE

The Experience Study Process

SOA Standard · 5-Phase Workflow

1. **DEFINE SCOPE**
   Set observation period (3–5 years) and determine credibility threshold before data extraction begins.

2. **EXTRACT & VALIDATE**
   Pull policy and claims data from core systems; verify completeness, consistency, and data quality.

3. **CALCULATE ACTUALS**
   Compute actual experience metrics per assumption type: mortality, lapse, expense, morbidity.

4. **A/E ANALYSIS**
   Compare actual vs. expected results; apply credibility weighting to stabilize volatile data.

5. **UPDATE & SIGN-OFF**
   Revise assumptions, document findings, and obtain actuarial sign-off for regulatory use.

GLOBAL STANDARD

SOA Experience Studies Operating Manual — this five-phase workflow is standard practice across life and health insurers worldwide, from the US and UK to Asia-Pacific markets.

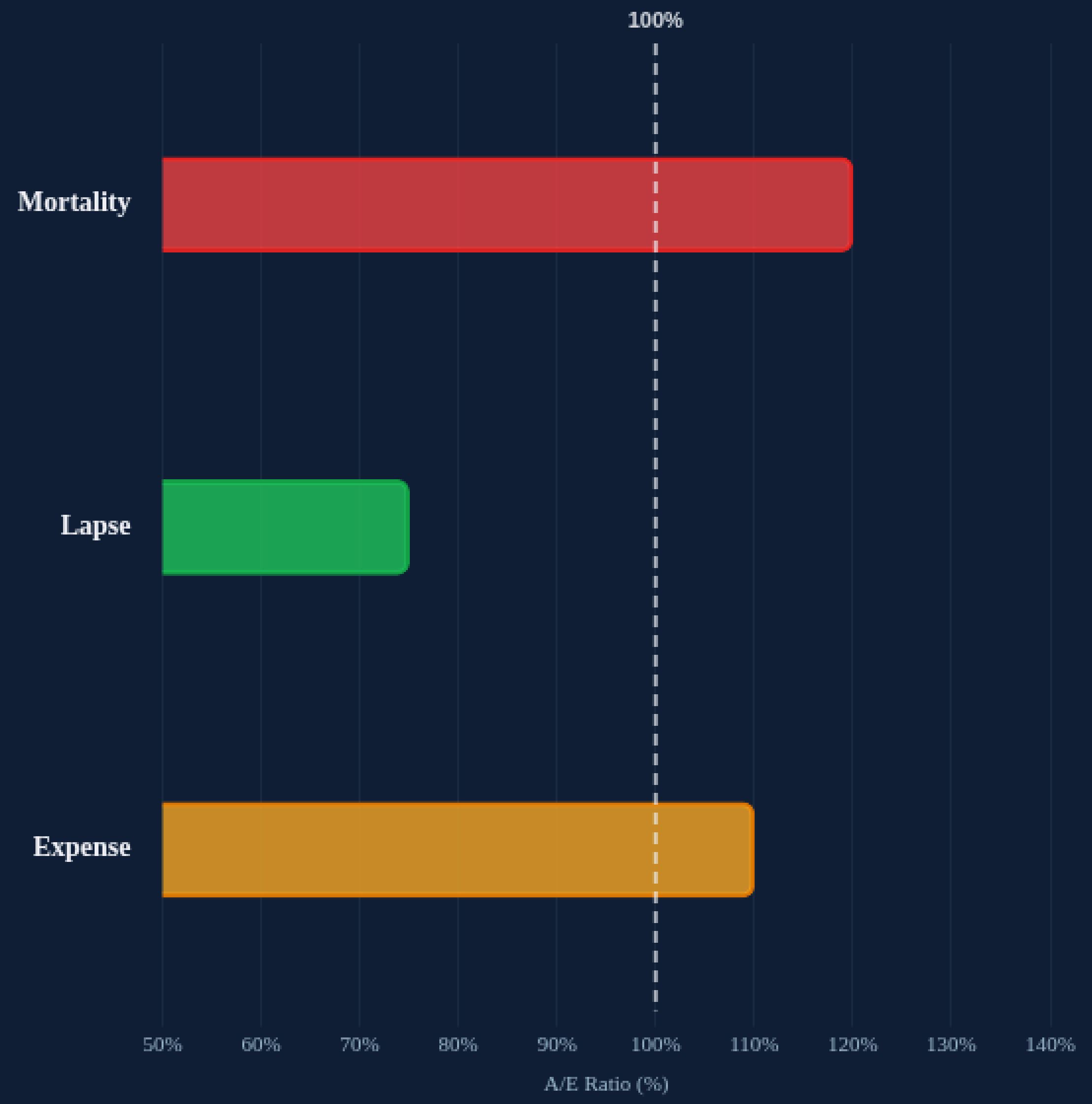
3–5 YEAR OBSERVATION PERIOD

5 SEQUENTIAL PHASES

Actual vs. Expected: The A/E Ratio

SOA STANDARD

A/E RATIO BY ASSUMPTION TYPE — SAMPLE RESULTS



FORMULA

$$\text{A/E Ratio} = \frac{\text{Actual Experience}}{\text{Expected (Assumed)}} \times 100\%$$

Source: SOA Experience Study Calculations (soa.org)

A/E > 110%: Review needed. Experience is worse than assumed — e.g., Mortality at 120% means actual deaths exceeded the assumed rate by 20%.

A/E < 90%: Potential release. Experience is better than assumed — e.g., Lapse at 75% means policies are persisting longer than expected.

A/E = 100%: Perfect match. Actual experience aligns exactly with the pricing or reserving assumption — no revision required.

Credibility matters. Classical theory requires ~1,082 claims for full credibility (90% confidence, ±5% margin) before acting on A/E results.

Acceptable range: 90%–110%. A/E ratios within this band generally do not trigger immediate assumption revision under global actuarial practice.

Where Results Feed Into

6 BUSINESS PROCESSES · GLOBAL PRACTICE

EXPERIENCE STUDY OUTPUTS DRIVE ALL KEY BUSINESS FUNCTIONS

Valuation
Premium reserves adequacy and embedded value calculations rely on current best-estimate assumptions.

Product Development
New product design and feature calibration informed by observed policyholder behavior trends.

Premium & Pricing
Premium sufficiency review ensures rates remain adequate against actual experience emerging.

Business Planning
Financial projections and capital planning anchored to updated mortality, lapse, and expense assumptions.

Asset-Liability Mgmt
ALM strategies aligned to liability duration and cash flow profiles derived from experience data.

Reinsurance Review
Treaty terms and risk transfer optimization reviewed against actual claims and lapse experience.

BALANCED ASSUMPTIONS

Financial & non-financial impacts analyzed before implementation

IFRS 17 IMPACT

Under IFRS 17, assumption changes driven by experience analysis flow **directly into P&L or the Contractual Service Margin (CSM)** — making study quality a first-order financial reporting concern.

The Global Regulatory Mandate

REGULATORS WORLDWIDE REQUIRE INSURERS TO CONDUCT REGULAR EXPERIENCE STUDIES

GLOBAL FRAMEWORKS

International Standards

IFRS 17 Global · Jan 2023

Current estimates must reflect up-to-date best estimate assumptions. Experience variances flow directly into P&L or adjust the Contractual Service Margin (CSM).

Solvency II EU · ORSA

Own Risk and Solvency Assessment (ORSA) requires annual assumption review as part of the internal risk management framework.

NAIC US · Annual

Appointed actuary must formally opine on assumption adequacy annually; documented, transparent experience studies are expected by regulators and auditors.

Minimum Frequency All Frameworks

At least annually across all major global regulatory frameworks. More frequent reviews required when material experience deviations are observed.

vs

INDONESIA CONTEXT

Local Regulatory Requirements

OJK POJK 8/2024 Effective Jun 2024

Requires product performance monitoring (pemantauan kinerja produk) and periodic product review. Insurers must systematically track and analyze actual vs. expected experience.

PSAK 117 Effective Jan 2025

Indonesia's full adoption of IFRS 17. Current estimates must use up-to-date assumptions; experience variances flow into P&L or CSM — making experience studies a financial reporting requirement.

Appointed Actuary OJK Mandate

Appointed actuary is responsible for assumption adequacy sign-off. Compliance requires clear process documentation covering who prepares, reviews, and approves each study.

GOVERNANCE REQUIREMENT Preparer → Reviewer → Approver

Clear accountability chain required by all frameworks

At Least Annually

PSAK 117 & IFRS 17: Impact on Experience Studies

IFRS 17 Global: Effective Jan 2023

PSAK 117 Indonesia: Effective Jan 2025

Current Best Estimate Assumptions

Insurers must use **up-to-date best estimate assumptions** in all liability valuations. Static or outdated assumptions are no longer acceptable under IFRS 17 / PSAK 117 — experience studies are the mechanism to keep estimates current.

Liability Measurement

Experience Variances → P&L or CSM

Differences between actual and expected experience **flow directly into the income statement or adjust the Contractual Service Margin (CSM)**. Poor assumption quality creates immediate financial statement volatility.

Financial Reporting Impact

Explicit & Separate Risk Adjustment

IFRS 17 requires the **risk adjustment for non-financial risk to be set explicitly and disclosed separately**. Experience studies provide the empirical basis for calibrating and justifying this adjustment to auditors and regulators.

Risk Quantification

Annual Study = Statutory Obligation

Experience studies are no longer just an actuarial best practice — they are a **financial reporting requirement**. Regulators and auditors expect documented, transparent studies as part of the appointed actuary's annual work.

Regulatory Compliance

Sources: InsuranceBrain.com (2024); Dinasti International Journal (2024); Journal Buana Akuntansi (2025)

Best Estimate vs. Prudent Assumption

KEY CONCEPT

"Asumsi terbaik ditetapkan berdasarkan data dan analisa yang cukup — bukan yang paling menguntungkan, bukan yang paling konservatif."

The best estimate is set based on sufficient data and analysis — not the most favorable, not the most conservative.

— Ira Dewi Elfini, Nityasa Niscita (Dec 2024)

Best Estimate
UNBIASED CENTRAL ESTIMATE

Data-driven; no implicit margins or conservatism built in

Risk Adjustment
EXPLICIT SEPARATE MARGIN

Compensates for non-financial risk uncertainty; stated transparently

IFRS 17
NO IMPLICIT PRUDENCE

Current estimates = best estimate only; prudence is a separate RA line

Judgment
ACTUARY'S ROLE

Required when data volume is insufficient for full statistical credibility

Global shift: IFRS 17, Solvency II, and modern actuarial standards all require ***explicit separation*** *of best estimate from risk margin — moving away from implicit prudence.*

GLOBAL BEST PRACTICE

6 Principles for a Credible Study

> A credible experience study is objective, data-driven, and compliant — applicable across all major insurance markets worldwide.

01 Holistic Business Scope

Consider **all business processes** — reserving, pricing, premium setting, business planning, ALM, and reinsurance — so assumption changes are balanced across every actuarial function.

SOA / IAA Aligned

02 Annual Review Minimum

Conduct a **formal review at least once per year**. Review more frequently when material deviations from expected experience emerge during the cycle.

IFRS 17 / PSAK 117

03 3–5 Year Observation Window

Use a **3 to 5 year observation period** for statistical stability. A window that is too short produces volatile results; one that is too long may mask recent emerging trends.

Statistical Credibility

04 Materiality Thresholds

Apply **dual materiality criteria**: sufficient data volume for statistical significance, and a defined financial impact tolerance. An assumption change requires both thresholds to be crossed.

Data + Financial Impact

05 Best Estimate Basis

Base assumptions on **sufficient data combined with actuarial judgment**. Where data is limited, apply credibility weighting and expert overlay — raw numbers alone do not constitute a best estimate.

Data + Judgment

06 Regulatory Compliance

Follow **applicable regulations and professional actuarial standards**. This includes OJK requirements in Indonesia, IFRS 17 / PSAK 117, Solvency II in the EU, and IAA guidelines globally.

OJK · IFRS 17 · IAA

Source: Nityasa Niscita — Ira Dewi Elfini (Dec 2024) · SOA Experience Studies Operating Manual · IAA Actuarial Standards

What's Next in This Series

EP01 COMPLETE

EP 01 • What Is an Experience Study? — Purpose, Scope, Regulatory Context, Assumption Setting — Now Complete

EP 02 Coming Soon

Mortality Experience Study

A/E Ratio, Exposed-to-Risk & Credibility Weighting

- Actual-to-Expected (A/E) Ratio deep dive
- Exposed-to-risk calculation methods
- Credibility weighting & mortality tables (TMI, CMI, SOA)

EP 03 Coming Soon

Lapse Experience Study

Lapse Rate Calculation, Trends & Assumption Validation

- Lapse rate calculation & policy year analysis
- Trend analysis & seasonality adjustments
- Assumption validation & back-testing

EP 04 Coming Soon

Expense Experience Study

Unit Cost Analysis & Expense Allocation Methods

- Unit cost analysis & expense allocation
- Inflation adjustment techniques
- IFRS 17 cash flow expense classification

Follow for the Next Episode
Get notified when Ep02 — Mortality Experience Study drops on LinkedIn

Download Free Excel Worked Example
Simplified A/E ratio calculation with sample mortality data — available on my website

REFERENCES

01 InsuranceBrain.com — *Definition: Experience Analysis* (2024)

02 Nityasa Niscita / Ira Dewi Elfini — *6 Do's Dalam Experience Study* (Dec 2024)

03 SOA — *Experience Study Calculations Tool* (soa.org, updated 2024)

04 OJK — *POJK No. 8/2024* · Product Monitoring Requirements

05 IASB — *IFRS 17 Insurance Contracts* (Global, eff. Jan 2023)

06 DSAK IAI — *PSAK 117 Kontrak Asuransi* (Indonesia, eff. Jan 2025)