PYGMALIOS

State of Shelf Availability & Store Foot Traffic

A Pygmalios Benchmark Report — 2026

What physical retail actually measures — and what it leaves on the shelf.

Pygmalios — in-store computer-vision analytics
2,000+ locations · 250M+ shopper sessions · 20+ countries
June 2026

Executive Summary

The physical store still generates the overwhelming majority of retail sales, yet it remains the least instrumented part of the value chain. Two structural gaps define 2026: shelves that are empty when shoppers arrive, and stores that count revenue but not the visitors who produce it. The numbers below quantify both.

- **The worldwide average out-of-stock rate is 8.3%** — roughly 8 of every 100 items a shopper looks for are not on the shelf. The figure has barely moved in two decades. *(GMA, 2002)*
- **Out-of-stocks and overstocks cost retailers an estimated $1.77 trillion globally in 2023** — out-of-stocks alone account for $1.2 trillion. *(IHL Group, 2023)*
- **Stock-outs cost a typical retailer about 4% of sales** — roughly $40 million a year for a billion-dollar retailer. *(Corsten & Gruen, HBR, 2004)*
- **When an item is missing, 31% of shoppers buy it at another store and 9% don't buy at all** — the retailer loses the sale outright on roughly 4 in 10 stock-out encounters. *(GMA, 2002)*
- **Brick-and-mortar conversion runs 16–40% (about 27% average)** versus 2–4% online — every store visitor is worth far more than an average web session, yet far fewer are measured. *(Trakwell, 2024; Firework / Statista, 2025)*
- **Only 7–10% of retailers use any form of video analytics** — 90%+ still assess shelf availability through manual walks and periodic audits. *(ECR Retail Loss, 2024)*

Key Numbers

8.3% Worldwide out-of-stock rate

Gruen, Corsten & Bharadwaj (GMA), 2002

Roughly 8 of every 100 items a shopper seeks are not on the shelf — and the rate has barely moved in twenty years.

$1.77T Global inventory distortion, 2023

IHL Group, 2023

Out-of-stocks ($1.2T) plus overstocks ($562B). The 2024 update put the total at $1.7T.

4% Of sales lost to stock-outs

Corsten & Gruen, HBR, 2004

About $40 million a year for a billion-dollar retailer.

31% Walk to a competitor

Gruen, Corsten & Bharadwaj (GMA), 2002

Share of shoppers who buy the missing item at another store; a further 9% do not buy at all.

27% In-store conversion, vs 2–4% online

Trakwell, 2024; Firework / Statista, 2025

The physical visitor converts an order of magnitude better than the average web session — yet is measured far less rigorously.

7–10% Retailers using any video analytics

ECR Retail Loss, 2024

More than 90% still measure shelf availability by hand.

4–8% Sales uplift from inventory-accuracy correction

ECR Retail Loss, controlled experiments

Measured even off an already-accurate baseline.

252% More likely to deploy computer vision

IHL Group / Scandit, 2025–2026

Sales-winning retailers versus laggards, planning a deployment in the next 12 months.

On-Shelf Availability & Out-of-Stocks

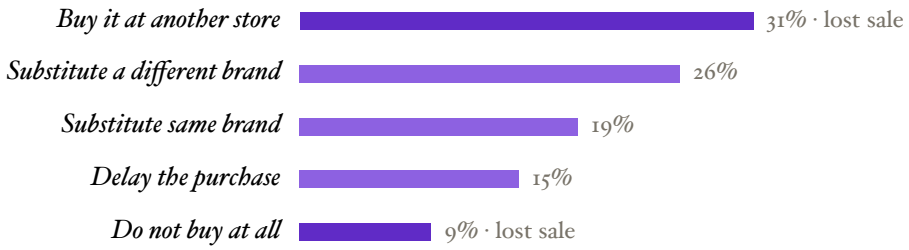
The canonical figure. The foundational worldwide study of retail out-of-stocks — Gruen, Corsten and Bharadwaj's analysis of survey data from more than 71,000 consumers across 29 countries, published through the Grocery Manufacturers Association in 2002 — established a global average out-of-stock rate of 8.3%. For an average basket of 100 items, a shopper can expect just over 8 to be unavailable.

The number has proven stubbornly durable. A later European review by ECR Retail Loss reported an average out-of-stock rate of 8.6% in Europe, slightly above the global average — a persistence captured in the academic review titled *Forty years of Out-of-Stock research, and shelves are still empty.*

Promoted items are worse. Out-of-stock rates for promotional items run materially higher than the all-product average; ECR's Optimal Shelf Availability work notes promotional rates that can reach 15–20% during peak periods — precisely the items retailers are spending to push. *(ECR Europe, 2016; promotional-period estimate)*

The cost. The IHL Group estimates global inventory distortion — the combined cost of out-of-stocks and overstocks — at $1.77 trillion in 2023, of which out-of-stocks account for $1.2 trillion and overstocks $562 billion. At the level of the individual retailer, Corsten and Gruen found stock-outs translate into sales losses of about 4% — roughly $40 million a year for a billion-dollar retailer.

What shoppers do when an item is out of stock



Averaged across categories worldwide. Blue marks the responses that cost the retailer the sale. Source: Gruen, Corsten & Bharadwaj (GMA), 2002.

Combining the two responses that cost an immediate sale — buying elsewhere and not buying at all — ECR concludes that of 100 shelf out-of-stock incidents, roughly 43 lead to lost revenue once brand and size down-trading is counted. Overstocks are the other half of the same problem: excess inventory cost retailers an estimated $562 billion in 2023. The goal is not more stock, but the right stock, accurately measured.

Store Foot Traffic & Conversion

Footfall: an uneven recovery. Post-pandemic physical-retail traffic recovered but, in mature markets, has not uniformly returned to 2019 levels. In the UK, MRI Springboard reported footfall 14.2% below 2019 in 2022, improving to 11.5% below in 2023; the BRC–Sensormatic IQ Footfall Monitor then recorded total UK footfall down 2.2% in 2024 and 0.8% in 2025 — a plateau rather than a continued rebound. The picture varies by format: CBRE reports European retail parks have surpassed pre-Covid levels, and Placer.ai data show US mall visits in 2024 ran about 7.3% above 2019.

Conversion: the in-store advantage. Brick-and-mortar conversion runs far higher than online. Trakwell puts the average store conversion at 27%, with a typical range of 16–40%; TruRating reports roughly 15–30% for specialty retail and 20–40% for grocery. E-commerce conversion typically sits at 2–4%. Each store visitor is, on a conversion basis, far more valuable than an average website session — yet stores measure these visitors far less rigorously than websites measure theirs.

Dwell and value. Benchmarks are format-specific: Placer.ai finds activewear visits average 27 minutes, while grocery shows more trips and shorter visits. Documented case studies quantify the upside of acting on the data — Boggi Milano reported a 40% increase in shopper yield and a 5-point conversion uplift; UNTUCKit reported an 18% increase in sales per shopper. *(RetailNext case studies; vendor-reported, single-retailer results.)*

The Measurement Gap

Physical retail is rich in revenue but poor in instrumentation. The evidence:

- **Most stores don't measure shelf availability continuously.** ECR Retail Loss's 2024 survey of 81 retailers across 20 countries found video-analytics utilisation at just 7–10% — meaning 90%+ still rely on manual store walks, periodic audits and point-of-sale proxies. *(ECR Retail Loss, 2024)*
- **System stock is not shelf truth.** ECR characterises balance-on-hand inventory as a belief, not ground truth — receiving errors, shrink, mis-scans and misplacement routinely diverge from what is physically on the shelf.
- **Adoption is rising fast off a low base.** IHL Group (with Scandit) reports inventory visibility now ranks as the #2 technology investment priority, and that sales-winning retailers are 252% more likely than laggards to plan computer-vision deployments in the next 12 months. *(IHL / Scandit, 2025–2026)*
- **The market is compounding in the low-to-mid 20s%.** Retail computer vision is fore-

cast to grow at roughly 22–24% CAGR through 2030. *(Grand View Research, 2024; Research and Markets, 2026; forecasts vary by scope.)*

- **The ROI is increasingly quantified.** ECR's controlled experiments found correcting inventory-record inaccuracy produced 4–8% sales uplifts; IHL reports shelf-intelligence deployments lifting on-shelf availability by 5%. *(ECR Retail Loss; IHL Group, 2025)*

The gap is the opportunity: a large share of the $1.77 trillion lost to inventory distortion is, in effect, the cost of not measuring the shelf accurately and in time to act.

What Good Looks Like — 2026

01 On-shelf availability of 96–97% or better

An out-of-stock rate at or below 3–4%. World-class performers operate well below the 8.3% global average; 5% is a credible improvement target, 3–4% the leading edge.

02 Real-time, not periodic, shelf monitoring

Close the gap between system stock and shelf truth with continuous sensing rather than the manual snapshots 90%+ of retailers still rely on.

03 Promotional availability managed as its own target

Given promotional out-of-stocks of 15–20%, give promoted SKUs dedicated safety stock and monitoring, so marketing spend is not wasted on empty shelves.

04 Measure conversion and capture rate, not just sales

With in-store conversion averaging 27%, even a 1–2 point lift is material. Benchmark each store against comparable peers rather than a universal number.

05 Tie dwell time to merchandising decisions

Where the format rewards engagement, use the documented link between dwell and sales to guide layout and staffing.

06 Build the business case on documented ROI

4–8% sales uplift from inventory-accuracy correction; 5% availability gains from shelf intelligence — defensible ranges, not hype.

Methodology & Sources

This report synthesises publicly available, attributable statistics from industry bodies (ECR Retail Loss / ECR Europe, the Grocery Manufacturers Association), analyst and research firms (IHL Group, McKinsey, Grand View Research, Research and Markets), retail-analytics providers and indices (Sensormatic / ShopperTrak, MRI Springboard, RetailNext, Placer.ai, Trakwell, TruRating) and the British Retail Consortium. Foundational metrics — the 8.3% global out-of-stock rate and the consumer-response split — derive from the Gruen–Corsten–Bharadwaj study, the most widely cited primary source on retail out-of-stocks; its figures are dated 2002 and marked as such. Vendor-reported case studies, market-size forecasts and figures older than 2022 are flagged in-line. No proprietary Pygmalios data is presented in the statistics above.

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- Grand View Research, 2024; Research and Markets, 2026; Growth Market Reports; McKinsey, 2020

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