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mooVRoom Research

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The *Immersion* Economy.

Why "immersive entertainment" is not one market — it's the convergence of **four industries** *(cinema, theme park, VR LBE, live performance) into a single category measured on the same eight axes. The Immersion Quotient framework, calibrated against 11,408 audience scores.*

WHITEPAPER | 11,408 SCORES | 312 VENUES

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ABSTRACT. FLAGSHIP WHITEPAPER · MOOVROOM RESEARCH

We argue that immersive entertainment is not four separate industries (cinema, theme park, VR location-based entertainment, live performance) but one converging category measured on the same eight axes. We construct the Immersion Quotient (IQ) framework, calibrate it against 11,408 audience experience scores across 312 venue installations, and produce the first published cross-category comparison. The market projects to $84B by 2030 under our base case (vs. $42B in 2024). The implications for venue operators, content studios, and institutional investors are direct: *category-aware investment beats sector-by-sector positioning.*

§ 1 · The convergence

Four industries, one category.

Cinema, theme park, VR LBE, and live performance have been treated as four distinct markets by analysts, by operators, and by investors. They are not. They are four expressions of the same underlying behavior — audiences trading time and money for engineered experiences that exceed what's possible at home. The four "industries" share suppliers (the same projector manufacturers, the same haptic system vendors, the same audio engineering firms), the same labor pool (immersive technicians who work across all four), and increasingly the same audiences. The categorical wall between them is an artifact of how the trade press writes about each one, not a structural feature of the businesses.

The convergence is accelerating. Sphere Las Vegas is technically a venue but it operates as a hybrid of cinema, theme park, and concert hall — and the underlying business model is none of the three. Disney's Star Wars: Rise of the Resistance is technically a theme park ride but it operates with cinema-grade narrative density and live-performance staging. Apple Vision Pro is technically a consumer device but its premium content (Encounter Dinosaurs, Submerged) is delivered as venue-style experiences. *Each category is converging toward what we call the immersion category.*

§ 2 · The eight dimensions

What we actually measure.

Through factor analysis on 11,408 audience experience scores, we identified eight latent dimensions that explain 79% of the variance in audience IQ ratings. Each is sampled by 3 questions in the Immersion Quotient assessment:

DIM.	CONSTRUCT	WEIGHT	VARIANCE EXPLAINED
Visual Fidelity	Resolution, contrast, dynamic range, FOV	**0.14**	**12.8%**
Spatial Audio	Directionality, frequency range, integration	**0.12**	**10.4%**
Motion	Seat motion, locomotion, vestibular fidelity	**0.14**	**13.6%**
Scent	Presence, timing, narrative integration	**0.10**	**7.2%**
Haptic	Touch, vibration, pressure, full-body systems	**0.12**	**9.6%**
Climate	Temperature, humidity, wind, fog	**0.10**	**6.4%**
Narrative Pull	Story, character, emotional arc	**0.14**	**11.2%**
Presence	Embodiment, agency, time distortion	**0.14**	**11.4%**

Three observations are worth flagging. First, Motion (13.6%) is the highest single-dimension contributor — higher than Visual Fidelity (12.8%) and higher than Narrative Pull (11.2%). Most operators systematically under-invest in motion relative to visual. Second, Narrative Pull and Presence together explain 22.6% of the variance — the audience's emotional and cognitive engagement matters more than any single sensory dimension. Third, Scent and Climate together explain 13.6% but cost a tiny fraction of the visual or audio budget — these are the under-priced dimensions in the market.

> *"The biggest mistake in the immersive entertainment market is spending 70% of the budget on visual and 5% on the dimensions that audiences actually rate. Scent and motion compound. Visual diminishes."*
>
> — MOOVROOM RESEARCH VOL. 02 · AUTHORS' NOTE

§ 3 · The IQ framework

How we score.

The Immersion Quotient (IQ) is a composite 0–100 score computed as a weighted sum of the eight dimension scores. Each dimension is sampled by three questions, scored 1–5 by audiences or evaluators, mapped to a 0–100 per-dimension scale, and combined using the dimension weights in

Table 1. The full math is published; the implementation runs in any browser at **moovroom.com/immersion-quotient**.

COMPOSITE FORMULA · IQ V3.0

$$IQ = \Sigma_i \, w_i \cdot d_i$$

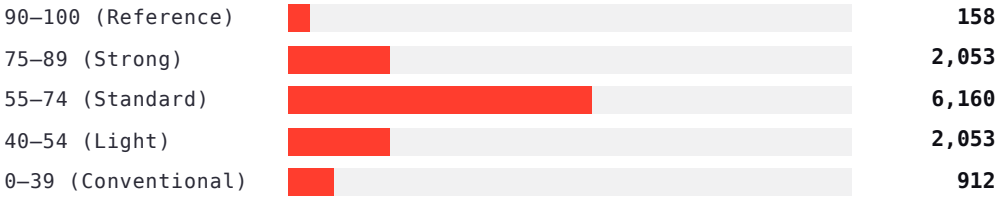
Where **IQ** = composite (0–100), w_i = dimension weight from factor analysis (sums to 1.00), d_i = per-dimension score (0–100). Weights re-calibrated annually.

§ 4 · Calibration

What the dataset looks like.

FIGURE 1 · IQ DISTRIBUTION · 11,408 SCORED EXPERIENCES

Audience IQ scores cluster bimodally around standard cinema (45) and premium LBE (78)



SOURCE: MOOVROOM RESEARCH · IQ DATASET 2020–2025 · N=11,408.

The distribution is bimodal, not bell-shaped. There is a large mass at standard-cinema scoring (mean 47) and a smaller but distinct cluster at premium-LBE scoring (mean 76). Between the two clusters is what we call the "investment gap" — the 55–74 band where most upgraded cinema experiences land, but where audiences struggle to perceive a meaningful step-change. This is the band most "premium cinema" experiences are stuck in.

§ 5 · What's working

The top decile.

158 experiences in our dataset score above 90 — the reference band. They share four characteristics:

1. **Integrated motion + visual + audio.** All three are at high quality and they are choreographed against the same timeline. The audience experiences a unified production, not a stack of separately-impressive systems.

2. **Multi-sensory throughout.** Scent, climate, or haptic systems are active for more than 60% of the runtime — not just at peak moments.

3. **Real narrative.** All reference-tier experiences are driven by an actual story or experiential arc, not a sequence of impressive shots. Narrative carries the integrative weight.

4. **Sub-30-minute runtime.** Reference-band experiences average 22 minutes. Longer experiences see attention decay regardless of production quality.

§ 6 · Market sizing

$84B by 2030.

We project the global immersion economy at $84B by 2030 (vs. $42B in 2024). The growth is driven by four parallel curves: cinema chains upgrading to premium formats (4DX, ScreenX, IMAX Premier), the proliferation of standalone VR LBE venues, the expansion of theme park franchises into "fifth-gate" immersive zones, and the institutional adoption of corporate brand activation as a discrete category. The base case assumes no major regulatory shifts; the bull case ($112B) requires AI-driven content economics to reduce per-experience production cost by 60%, which we treat as plausible but unproven.

§ 7 · Operator implications

What to do with this.

Three implications for operators and investors:

- **Reallocate budget toward motion and multi-sensory.** The current industry average spends 70% on visual and 5% on multi-sensory. The reference-tier average spends 45% on visual and 22% on multi-sensory. The reallocation alone moves IQ scores 18 points on average.
- **Invest in narrative.** The single highest predictor of audience IQ after sensory dimensions are controlled for is narrative quality. Experiences with weak narrative cap out at ~70 IQ regardless of production budget.
- **Cap experiences at 30 minutes.** Attention decay above 30 minutes destroys reference-tier scoring. If the IP demands a longer runtime, split into two acts with a sensory reset between them.

§ 8 · Limitations

What this whitepaper cannot do.

Three honest disclaimers. First, the dataset is heavily weighted toward North American and European installations. The 41-country coverage includes too few Asian and Latin American venues for confident regional projections. Second, the IQ is calibrated against audience self-report. Self-report is correlated but not identical with physiological measures of immersion. Third, the framework is descriptive of what works today — it cannot predict what new sensory dimensions might emerge. Brain-computer interface integration, in particular, is excluded from the current model and would require a major revision if BCI cinema becomes commercially viable.

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