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**📄 PlaySimple Variant Testing – Analysis Report**

**Title: PlaySimple Variant Testing – Economy, Engagement & Retention Analysis  
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**🎮 PLAYSIMPLE**

**Variant Performance Analysis**

***Measuring Engagement, Economy & Retention***

**📂 Dataset Overview**

* We analyzed three datasets capturing distinct but related aspects of an experimental game content rollout:

**📅 Common Fields Across Datasets**

|  |  |
| --- | --- |
| **Column** | **Description** |
| date\_field | Date of the metric (formats inconsistent across rows) |
| variant\_group | Indicates experiment group (1, 2, or 3) |
| experiment | Describes the experiment type (always "content") |
| version | App version |
| gid | Game ID (constant: 4) |

**💲 1. overall\_economy.csv**

|  |  |
| --- | --- |
| **Column** | **Description** |
| cash\_spent | Amount of in-game currency spent |
| cash\_earned | Amount of in-game currency earned |
| earntype | Earn method: rewarded, purchased, etc. |
| installs | Daily installs per variant |

*Used to assess in-game economy and user monetization.*

**🎮 2. overall\_engagement.csv**

|  |  |
| --- | --- |
| **Column** | **Description** |
| action\_type | Action type: clear, fail, use\_hint, etc. |
| actions | Count of such actions |
| installs | Daily installs |

*Used to analyze user behavior, gameplay interaction, and difficulty.*

**📈 3. overall\_retention.csv**

|  |  |
| --- | --- |
| **Column** | **Description** |
| d1(%) to d30(%) | Retention percentage on day 1, 7, etc. |
| installs | Installs per variant per date |

*Used to track user retention and longevity per variant.*

**⚠️ Data Quality Note**

* The date\_field has mixed formats (DD-MM-YYYY, YYYY/MM/DD, etc.).
* Standardization is crucial before time-series analysis or merging datasets.

**🧪 Problem 1: Variant Performance & Difficulty Ranking**

🔎 **Objective**

Evaluate the three experimental variants based on:

* Engagement
* Economy
* Retention

Answer:

1. Which variant is best overall?
2. How do the variants rank in terms of gameplay difficulty?

**📊 Engagement Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | **Variant 1** | **Variant 2** | **Variant 3** |
| Users | 425,595 | 451,000 | ✨ 581,905 |
| Actions/DAU | 7.43 | ✨ 7.62 | 6.95 |
| Actions/User | 9.26 | ✨ 9.50 | 8.71 |

**📌 Action-Type Breakdown (per DAU)**

* Clear: V2 (9.94) > V1 (9.64) > V3 (8.97)
* Fail: V2 (7.01) > V1 (6.92) > V3 (6.46)
* Use Hint: V1 ≈ V2 > V3 (lowest hint use)
* Views: V2 > V1 > V3

🧠 Insight: Variant 2 leads in user activity and puzzle interaction. Variant 3 has most users but lower engagement intensity.

**💲 Economy Analysis**

* Cash per User & DAU: Variant 2 has the highest averages.
* Total Cash: Variant 3 has the highest due to larger user base.

🔹 Key Takeaway:

* Variant 2 = more valuable users (higher per-user spend)
* Variant 3 = more users (higher total earnings)

**📈 Retention Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | **Variant 1** | **Variant 2** | **Variant 3** |
| D1 | 59.5% | ✨ 61.5% | 60.0% |
| D7 | 19.1% | ✨ 19.9% | 19.0% |
| D14 | 7.67% | ✨ 8.54% | 8.00% |
| D21 | 2.21% | ✨ 2.46% | ✨ 2.46% |

🔹 Conclusion: Variant 2 consistently retains more users across all key milestones.

🏁 Final Answers

🏆 1. Best Variant: Variant 2

* Highest engagement per user
* Best retention at every stage
* Strong monetization per user, despite lower overall cash
* Balanced difficulty: not too hard, not too easy

🎮 2. Difficulty Ranking (based on fail & hint usage)

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| --- | --- | --- |
| **Rank** | **Variant** | **Description** |
| 1 | Variant 2 | Moderate (ideal challenge level) |
| 2 | Variant 1 | Slightly easier |
| 3 | Variant 3 | Easiest (least fail & hint use) |

**💡 Problem 2: Which Game to Fast-Follow?**

**🔍 Objective**

Evaluate:

* Words With Friends
* Candy Crush

...to determine which game concept is better to fast-follow based on retention and market conditions.

**📊 Provided Retention Data**

|  |  |  |
| --- | --- | --- |
| Metric | Words With Friends | Candy Crush |
| D1 | 60% | 55% |
| D30 | 25% | 15% |

**🌎 Market & Gameplay Comparison**

|  |  |  |
| --- | --- | --- |
| **Feature** | **Words With Friends** | **Candy Crush** |
| Genre | Multiplayer Word Game (PvP) | Single-player Match-3 Puzzle |
| Monetization | Ads + Coins for Powerups | IAP-heavy: lives, boosters, retries |
| Replayability | Infinite (real-time opponents) | Finite levels, burnout risk |
| Social Stickiness | High (chat, leaderboards, PvP) | Medium (events, but less social) |
| Skill vs. Luck | Skill-based gameplay | Luck-based + pay-to-progress |

**💰 Revenue & Popularity (from public sources)**

|  |  |  |
| --- | --- | --- |
| **Metric** | **Words With Friends** | **Candy Crush** |
| MAU (Monthly Active) | ~4–5 million | ~200 million |
| Lifetime Revenue | ~$500M+ | ~$10B+ |
| Peak Rank (iOS/Android) | Top 200–300 | Top 10–20 |

🧠 **Insight**:

* Candy Crush is a massive revenue success but hard to compete with.
* Words With Friends is niche, social, and easier to innovate on.
* **🧠 Business Decision: Retention vs. Revenue**

|  |  |  |
| --- | --- | --- |
| Metric | When It Matters | Why It Matters |
| Retention | Early-stage games | Proves core loop & user love |
| Revenue | Scaling/mature games | Proves monetization works |

**✅ Recommendation**

**✅ Fast-Follow Words With Friends**

* Better **early and long-term retention**
* **Skill-based** and **social** game dynamics
* Easier to build upon and innovate
* Less saturated market = better organic growth