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ANA-27: Sign-up Completion Analysis - Google vs Email

Original Ticket: When someone signs up on the website they can sign up with email or Google.
Theory: Users who sign up with email + password are less likely to complete sign up, primarily because coming up with a password is difficult.
Question: Is this true?

Analysis Date: 2025-06-25
Data Coverage: Complete historical analysis (March 2023 - June 2025)
Analysis Scope: 129,139 total sign-up events, 112,503 unique sessions

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Answer to Original Question

The Theory is FALSE

Email sign-up consistently OUTPERFORMS Google OAuth in completion rates

Method	Current Completion Rate	Historical Range	Speed
Email	**72.78%**	72-77% (stable)	6-14 minutes
Google	64.84%	50-77% (volatile)	0.8-3 minutes

Key Finding: Password Creation is NOT the Barrier

1. **Email users are MORE likely to complete** despite password requirements
2. **Google users abandon at higher rates** despite no password needed
3. **The theory assumes password friction, but data shows the opposite**

Detailed Analysis

Current State (Last 28 Days)

- **Email**: 1,881 starts → 1,369 completions = **72.78%** completion rate
- **Google**: 2,136 starts → 1,385 completions = **64.84%** completion rate
- **Advantage**: Email has **7.94 percentage point advantage**

Historical Context

The pattern has been consistent throughout the analysis period: - **Email**: Maintains stable 72-77% completion rates - **Google**: Shows higher volatility (50-77% range) with periodic major drop-offs - **Baseline gap**: Even during Google's best periods, email typically performs equal or better

Why This Contradicts the Password Theory

1. Speed vs Success Paradox

- **Google**: Faster process (0.8-3 minutes) but LOWER completion rates
- **Email**: Slower process (6-14 minutes) but HIGHER completion rates
- **Implication**: Password creation time is not the primary friction point

2. User Commitment Hypothesis

- **Email users**: Higher initial commitment threshold leads to higher completion
- **Google users**: Lower barrier to entry may attract less committed users
- **Result**: Easier start doesn't guarantee easier finish

3. Technical vs Psychological Friction

- **Expected**: Technical friction (password) should reduce completion
- **Reality**: Psychological commitment may be more important than technical ease

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Volume Distribution Analysis (for EPD-1390)

Current Proportions (Last 28 Days)

- **Google Sign-ups**: 2,136 attempts = **53.2%** of total volume
- **Email Sign-ups**: 1,881 attempts = **46.8%** of total volume
- **Total**: 4,017 sign-up attempts

Historical Trends

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Volume Distribution Over Time:
- Google consistently represents 52-58% of sign-up attempts
- Email represents 42-48% of sign-up attempts
- Google is the majority choice but not by a huge margin
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Business Impact of Volume Distribution

- **Google dominance**: Majority of users prefer Google OAuth
- **Performance gap impact**: Since Google has higher volume but lower completion rates, this compounds the business impact
- **Risk concentration**: Over 50% of sign-up success depends on Google OAuth performance

EPD-1390 Implications

With Google representing **53.2% of sign-up volume**: 1. **Any Google OAuth improvements** have outsized business impact 2. **Google performance issues** affect majority of potential users 3. **Investment in Google flow optimization** should be prioritized due to volume

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Root Cause Analysis: Why Does Email Outperform Google?

Problem Identification

Since the original theory (password difficulty) is disproven, we need alternative explanations:

1. User Intent Differences

- **Email users**: Self-select for higher commitment (willing to create password)
- **Google users**: May be casual browsers taking the "easy" path
- **Quality vs Quantity**: Google attracts more attempts but lower-quality prospects

2. Technical Implementation Issues

- **OAuth complexity**: More failure points than simple email form
- **Third-party dependencies**: Google API reliability, browser compatibility
- **Error handling**: Users may not understand OAuth failures as easily as form errors

3. User Experience Problems

- **Permission requests**: May feel invasive or unclear
- **Redirect confusion**: Users may not understand OAuth flow

- **Trust issues**: Some users prefer direct account creation over third-party auth

Historical Performance Degradation

- **Early 2023**: Google briefly matched email performance (75-77%)
- **2023-2025**: Google performance declined while email remained stable
- **Pattern**: Suggests something changed in Google implementation or external factors

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Business Impact Analysis

Current Loss Due to Incorrect Theory

By assuming email would perform worse, the business may have: 1. **Over-optimized Google flow** while neglecting email experience 2. **Missed opportunities** to improve the better-performing method 3. **Focused on wrong problem** (password friction vs OAuth reliability)

Quantified Impact

- **Annual opportunity**: 2,200 additional users if Google matched email performance
- **Monthly loss**: ~183 users per month from performance gap
- **Volume-weighted impact**: Since Google is 53% of volume, improvements have major impact

EPD-1390 Volume Insights

Google's **53.2% volume share** means: - **Investment in Google improvements** affects majority of users - **Google downtime/issues** impact most sign-up attempts - **Optimization priority** should focus on Google due to volume + performance gap

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Recommended Actions

Immediate (Next 2 Weeks)

1. **Reverse assumptions**: Stop treating Google as the "better" method
2. **Audit Google OAuth flow** for technical issues and UX problems
3. **Implement monitoring** for Google completion rate drops
4. **Investigate error rates** and failure modes in Google flow

Medium-term (Next Month)

1. **User research**: Why do email users complete at higher rates?
2. **A/B test Google improvements**: Simplify permissions, improve error handling
3. **Competitive analysis**: How do other companies handle Google OAuth?
4. **Consider hybrid approach**: Start with email, offer Google for convenience

Long-term (Next Quarter)

1. **Goal**: Bring Google completion rate to email levels (72%+)
2. **Strategy**: Treat Google as the problem to solve, not the solution

3. **Measurement**: Target 75%+ Google completion rate with <5% volatility

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Supporting Data

Query Analysis Tools

1. **Current comparison**: `signup_completion_analysis.sql`
2. **28-day rolling trends**: `signup_completion_analysis_rolling_28d.sql` (1,578 windows)
3. **7-day rolling trends**: `signup_completion_analysis_rolling_7d.sql` (1,598 windows)
4. **Volume proportions**: `signup_method_proportions.sql`

Key Metrics

- **Completion rates**: Primary success measure
- **Volume distribution**: Business impact scaling

- **Time-to-complete**: Process efficiency indicator
- **Historical volatility**: Risk assessment

Conclusion

Answer to Original Question

The theory is definitively FALSE. Email sign-up (with password creation) consistently outperforms Google OAuth by 5-10 percentage points. Password difficulty is NOT the primary barrier to sign-up completion.

EPD-1390 Volume Analysis

Google represents **53.2% of sign-up attempts**, making it the majority choice. However, this volume advantage is offset by its **7.94 percentage point completion rate disadvantage**.

Strategic Implication

The business should: 1. **Flip the optimization focus**: Improve Google OAuth, not email forms 2. **Question OAuth assumptions**: Faster does not equal better completion rates 3. **Investigate Google issues**: Technical problems, UX confusion, or user intent differences 4. **Leverage email success**: Study what makes email flow more successful

Expected outcome: Fixing Google OAuth to match email performance would add **2,200+ users annually** while improving the experience for the **53% of users who prefer Google sign-up**.

Analysis completed using complete historical dataset: 129,139 sign-up events, disproving the original password-difficulty theory