Turas Conjoint

Transparent. Trustworthy. Tangible insights.

Understands preference trade-offs—if you reduce price but remove free shipping, do customers still prefer your offer? Conjoint analyzes how people make trade-off decisions between product features and price, revealing the value customers place on each feature.

What This Module Does

When designing products or services, you face trade-offs: How much is a premium feature worth vs. lower price? Which combination of features will win the most customers? Conjoint quantifies customer preferences and simulates market share for different product configurations.

Using multinomial logit modeling (the methodology that won the 2000 Nobel Prize in Economics), Conjoint estimates part-worth utilities from observed choices—then lets you predict market outcomes for any product configuration you can imagine.

What You Get

Utility Outputs

- **Part-worth utilities:** Value of each feature level (zero-centred for comparison)
- **Attribute importance:** Which attributes matter most (% of total utility range)
- **Price sensitivity coefficient:** How much utility decreases per dollar/unit of price

Market Simulation

- **Market share predictions:** Predicted share for any product configuration
- **What-if scenarios:** Change price, add features, see impact on share
- **Willingness-to-pay:** Dollar value customers place on specific features
- **Excel simulator:** Interactive tool for testing product configurations

How It Works

The Core Idea

People choose the option with the highest total utility. Utility = sum of part-worth values for all features. By observing thousands of choices, the model estimates the utility value of each feature level.

Multinomial Logit (MNL)

Converts utilities into choice probabilities: P(choose option) = exp(Utility) / sum(exp(all options)). Maximum likelihood estimation finds utilities that best explain observed choices.

Why Negative Utilities Are Normal

Utilities are relative, not absolute. What matters is the difference between options, not whether numbers are positive or negative. If price coefficient dominates, total utility goes negative—but probabilities come out correctly.

Packages Used

All packages are peer-reviewed, open-source R packages available on CRAN.

Package	Why We Use It
mlogit	Nobel-cited methodology (McFadden 1974)—the gold standard for choice modeling
dfidx	Data structure for choice model formats
survival::clogit	Fallback conditional logit for robust estimation

Strengths

- ✓ **Nobel Prize methodology:** mlogit implements McFadden's (1974) random utility model
- ✓ **Market simulation:** Predict market share for any product configuration
- ✓ **Price optimization:** Find revenue-maximizing price points
- ✓ **Handles 'None' option:** Accounts for people choosing not to purchase
- ✓ **Realistic trade-offs:** Forces respondents to make real-world choices
- ✓ **Robust estimation:** Auto-fallback from mlogit to clogit if needed

Limitations

- ⚠ **Complex survey design:** Requires carefully designed choice experiments (needs expertise)
- ⚠ **Sample size requirements:** n≥200 for aggregate, n≥300 for HB (when available)
- ⚠ **Assumes rational choice:** People choose based on utilities (doesn't capture impulse/emotion)
- ⚠ **Attribute independence:** Assumes features are evaluated independently
- ⚠ **Aggregate utilities only:** Individual-level utilities via Hierarchical Bayes are not currently available. Aggregate (population-level) utilities are provided.

Sample Size Requirements

Minimum n≥200 for reliable aggregate estimates. Recommend n≥300 if planning individual-level analysis (future HB). Need 10-15 choice tasks per respondent with 3-5 options per task.

Best Use Cases

Ideal For

- ✓ Product development (which features to include)
- ✓ Pricing strategy (optimal price points)
- ✓ Competitive positioning (how to configure vs. competitors)
- ✓ Feature prioritization (what to build first)
- ✓ Market entry decisions (will our concept succeed)

Not Ideal For

- ⚠ Very complex products (>6 attributes gets difficult for respondents)
- ⚠ Emotional/aspirational products where logic doesn't apply
- ⚠ Small samples (<150 respondents)
- ⚠ When individual-level utilities are required immediately (HB coming in Phase 2)

Key Takeaways

- ✓ Part-worth utilities show the value of each feature level—higher = more preferred
- ✓ Attribute importance = range of utilities within an attribute / sum of all ranges
- ✓ Willingness-to-pay = utility difference / price coefficient
- ✓ Market share predictions let you test scenarios before launch
- ✓ The 'None' option share indicates overall category demand at your configurations

The Bottom Line

Conjoint is your product optimization powerhouse. When you need to understand trade-offs and predict market response to different product configurations, conjoint analysis provides rigorous, population-level insights using Nobel Prize-winning multinomial logit modeling. You'll know exactly what features are worth and how to configure your offering for maximum market appeal.

About The Research LampPost

Turas is developed and delivered by **The Research LampPost**, an organisational member of the Southern African Marketing Research Association (SAMRA). Duncan Brett is a SAMRA accredited researcher with 30+ years of market research experience. If you have questions about whether Turas is right for your project, if there is interest in the statistical documentation or module-specific information, or you would like a copy of our credentials, please get in touch at duncan@researchlamppost.co.za

Ready to discuss your project?

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