



Marshall School of Business

Final Project Report

“Unlocking Smart Ring Market Potential: A Conjoint Analysis Process”

MKT-566: Decision Making Using Marketing Analytics

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Problem Statement

What combination of features, price, and brand will maximize consumer adoption of a smart health ring, and could an Apple-branded ring succeed in this emerging market?

The smart wearable market is growing rapidly, and smart rings represent a promising new category for health and fitness tracking. With competitors like Oura and Samsung already in the space, it is critical to assess whether Apple could successfully enter this market and what product configuration would drive adoption. Given the complex trade-offs consumers make between price, battery life, features, and brand trust, we conducted a choice-based conjoint analysis using Sawtooth software to uncover key consumer preferences. These insights will help evaluate the viability of an Apple smart ring and provide strategic recommendations for product design.

Conjoint Framework

Our survey began with demographic and behavioral screening questions covering age, gender, Apple product ownership, geographic location, and interest in the Apple smart ring. This helped contextualize respondent preferences before introducing the conjoint tasks.

We then conducted a Choice-Based Conjoint (CBC) experiment using Sawtooth Software. Participants evaluated smart ring profiles varying across four attributes: **Brand** (Apple, Samsung, Oura, Ultrahuman), **Price** (\$299–\$499), **Battery Life** (4–10 days), and **Features** (Fitness & Sleep Tracking plus AI Integration, Gesture Control, Interchangeable Shells, or Payment Option). In each task, respondents selected the product they would most likely purchase.

These attributes reflect the key factors influencing consumer decisions in the wearables market—balancing brand loyalty, affordability, usability, and innovation. The design enabled us to measure trade-offs, estimate part-worth utilities, and simulate preferences, directly addressing our research goal: evaluating the viability of an Apple smart ring in a competitive landscape.

Survey Respondent Profile

We collected responses from 99 individuals, 81.82% of whom were Apple users. The strongest preference came from younger respondents aged 23–30 (47.73%), with slightly higher interest among males (56.82%) than females (29.55%). In the overall market simulation, Apple led with 50.53% of total preference, followed by Samsung (27.26%), Ultrahuman (13.52%), and Oura (8.68%). Among Apple users, preference by the Apple ring users was even higher (53.53%), though non-Apple users also showed interest (37.03%), highlighting the brand's broad appeal. Notably, Apple captured 57.01% preference among undecided buyers, suggesting strong potential to convert interest into future purchases. While limited in scope and slightly skewed geographically, the sample offers useful directional insights into consumer sentiment toward smart health rings.

Data Analysis

Inferred Assumptions:

Apple Products	Price	Battery life	Features
Base Product	Price: \$349	Battery Life: 6 days	Features: Fitness & sleep tracker + Payment Option
Apple pro	Price: \$499	Battery Life: 10 days	Features: Fitness & sleep tracker + Gesture Control

Table 1. Products we plan to bring to market

In our analysis, we are evaluating the potential launch of either the Base or Pro version of the product. The Base model is positioned at a lower price point, offers shorter battery life, and includes a payment feature. In contrast, the Pro model is priced slightly higher, provides extended battery life, and features gesture control capabilities.

The margin for our base product is \$150 and careful activity based costing has led to the following estimates for costs of adding components to the base product:

Battery Life	Margins from the base	Features	Margins from the base
4	40\$	Payment	0\$
6	0\$	AI	-80\$
8	-30\$	Gesture	-100\$
10	-60\$	Multi-Face	-40\$

Table 2. Estimated Costs per level according to attributes

Market/ Product Development (BreakEven) Cost: \$65,000,000

Market/ Product Development (BreakEven) Cost for Two products: \$65,000,000 + \$30,00,000

RESULTS

Summary:

Based on average partworths across respondents, the \$299 price point attracts consumers most. AI-enabled fitness tracking features are clearly preferred, showing growing interest in intelligent health monitoring. The Apple brand carries significant weight, demonstrating strong brand loyalty. As expected, 10-day battery life is preferred. Brand emerged as the most influential attribute affecting consumer preference.

One Product strategy results:

Brand	Price	Battery life	Feature	Market Share	Market Size	Units Captured	Relative Margin	Revenue	Profit
Apple Base	\$349	6 days	Payment	50.53	1700000	859010	150	\$128,851,500	\$63,851,500
Apple Pro	\$499	10 days	Gesture	45.19	1700000	768230	140	\$107,552,200	\$42,552,200
Optimum Combination	\$499	6 days	Payment	36.8%	1700000	625600	300	\$187,680,000	\$122,680,000

Table 3. Product options for one product strategy

Our analysis reveals that the highest projected profit (\$122,680,000) comes from the optimal product configuration. After evaluating all 64 possible attribute combinations and calculating profits for each, we identified the most profitable configuration.

The Apple Base model captures more market share and generates greater profit than the Apple Pro model, though less than the optimal product. However, we hesitate to proceed with the optimal combination due to its higher price, shorter battery life, and limited payment functionality. Since this optimal product has the lowest market share, launching with such limited market presence isn't strategically sound, as it resembles an introductory version rather than a competitive offering.

Two Product strategy results:

Segmentation:

Average value of each segmentation variable, overall for each segment (centroid). Segmentation variables that are statistically different from the rest of the population are highlighted in red (lower) or green (higher).

	Population	Segment 1	Segment 2
Brand: Samsung (Rescaled Utility)	-1.094	0.823	-3.396
Brand: Oura (Rescaled Utility)	-27.81	-6.90	-52.90
Brand: Ultrahuman (Rescaled Utility)	-26.2	-16.3	-38.2
Price: \$399 (Rescaled Utility)	-15.12	-23.90	-4.58
Price: \$499 (Rescaled Utility)	-36.1	-51.0	-18.1
Price: \$349 (Rescaled Utility)	16.11	23.68	7.03
Battery Life: 10 days (Rescaled Utility)	14.97	28.93	-1.78
Battery Life: 6 days (Rescaled Utility)	3.34	-7.34	16.15
Battery Life: 8 days (Rescaled Utility)	6.94	7.32	6.47
Features: Fitness & sleep tracker + Payment Option (Rescaled Utility)	-17.6	-18.9	-16.1
Features: Fitness & sleep tracker + Gesture Control (Rescaled Utility)	3.96	-7.27	17.44
Features: Fitness & Sleep tracker + Interchangeable ring shells to match your style (Rescaled Utility)	-1.70	-4.60	1.78

Table 4. Characteristics of Segments

Based on the analysis of partworths, we identified two distinct consumer segments. **Segment 1** consists of individuals who prioritize longer battery life, exhibit strong price sensitivity, and place minimal emphasis on brand preference. In contrast, **Segment 2** includes consumers who are highly drawn to the Apple brand, demonstrate low price sensitivity, and are relatively indifferent to battery life considerations.

Conjoint Analysis by introducing the new products to their adequate segments

Segment 1:

Combination no	Market Share	Market Size	Units Captured	Revenue
Base Model	0.444	935,000	415140	\$62,271,000.00
Pro Model	0.333	935,000	311355	\$43,589,700.00

Table 5. Revenue generated by products in segment 1

Given that Segment 1 consumers are highly price-sensitive, we recommend positioning the base model to target this group. This strategy yields a market share of 44% among competing

products and generates an estimated revenue of \$62.271 million. Segment 1 represents 55 percent of the total market share.

Segment 2:

Combination no	Market Share	Market Size	Units Captured	Revenue
Base Model	0.689	765,000	527085	\$79,062,750.00
Pro Model	0.733	765,000	560745	\$78,504,300.00

Table 6. Revenue generated by products in segment 2

Since Segment 2 consumers are less sensitive to price, we position the Pro model to appeal to this group. This approach results in a 73% market share when accounting for competitors and drives an estimated revenue of \$78.504 million. Segment 2 represents 45 percent of the total market share.

Recommendations

We have come up with **two recommendations for Apple** to enter the market of smart health rings:

Short-Term Gain Vision:

In the short term, we recommend Apple enter the smart health ring market with a single product—the base model, positioned as the “Apple Ring.” This approach prioritizes immediate profitability and market capture, with an estimated profit of **\$63.85 million** and a projected market share of **50.3%**. The base model offers an accessible price point and essential features, making it a strong entry-level product to quickly attract a broad consumer base.

Long-Term Gain Vision:

For sustained growth and broader market coverage, we propose a long-term strategy involving a two-product launch. In this approach, the base model is targeted toward Segment 1, generating an estimated revenue of **\$62.27 million**, while the pro model is positioned for Segment 2, contributing an additional **\$78.504 million** in revenue. Although this strategy results in a lower initial profit—totaling **\$45.775 million** after subtracting the breakeven cost of \$95 million—it offers a greater total revenue of **\$140.775 million** (\$62.27M + \$78.504M) and expands Apple’s market share to **58.13%**. This vision aligns with building long-term brand equity and a stronger footprint in the smart wearables market.