IA2: Crew's Cup

Analyzing Customer Retention and Commitment

Nov 15, 2024 $\longrightarrow$

By Sherleen Lee

Executive Summary

Crew's Cup Fitness, once a prominent boutique fitness brand known for its high-energy rowing classes and a cult-like following, has faced a steep decline due to management changes, the COVID-19 pandemic, and controversial business decisions. The company, which originally thrived on premium service and strong customer loyalty, suffered from cost-cutting measures, brand dilution, and internal scandals under subsequent leadership.

After being acquired by Jordan Boekker, Crew's Cup's brand identity eroded further through franchising, aggressive discounting, and poorly received marketing campaigns. Boekker's sudden death left the company in turmoil, prompting a group of employees to propose a buyout. Tamika Guthrie became the new CEO to rescue the brand. Guthrie's leadership has focused on reviving the company's core values and stabilizing its operations during a critical turnaround phase.

Marketing head Aishwarya Kulkarni has conducted a survey to assess customer commitment levels, aiming to guide strategic decisions. The company is considering three investment options to combat high customer churn: **a new advertising campaign**, **a subscription model**, or **introducing a new class offering**.

Three Strategies

The three strategies mentioned in the Crew's Cup case are:

Advertising Campaign:
Proposed by Monk, the advertising agency.
Objective: Reconnect with loyal customers and signal a return to Crew's Cup's foundational values.
Use Case: If normative commitment is low, this campaign could rebuild shared values and strengthen emotional ties to the brand.

Subscription Model:
Suggested by CFO Devin Ross.
Objective: Increase long-term retention by offering stable, recurring revenue through subscription pricing, even at the cost of short-term margins.
Use Case: If economic commitment is flagging, this model could enhance the perception of financial value.

New Class Offering:
Advocated by founding instructors.
Objective: Introduce fresh experiences to re-engage long-term customers and renew their interest in the brand.
Use Case: If forced commitment is high, this could make customers feel less "trapped" and increase engagement.
These strategies align with the five-factor model of commitment and offer targeted solutions based on customer insights.

Strategic Recommendation

Which of the three options do you recommend based on the data from the experiment?

- **The focus should begin with New Class Offerings to quickly address churn and re-engage at-risk customers.**

Objective and Approach

01

Explanatory Factor Analysis

Uncovering customer commitment dimensions (e.g., affective, normative, economic, forced, and habitual).

02

Cluster Analysis

Segment the customer base into distinct groups based on their responses to commitment factors or other relevant variables (e.g., profitability, satisfaction).

03

ANOVA

Compare commitment levels or other key metrics (e.g., satisfaction, intent) across different customer segments or treatment groups.

04

Regression

Quantify the relationship between intent (e.g., intent to remain a customer) and the predictor variables.

Exploratory Factor Analysis (EFA)

Reliability of Factor Structure

To test the reliability of the factor structure for conducting factor analysis, we used the **Kaiser-Meyer-Olkin (KMO)** measure and **Bartlett's Test of Sphericity**.

```
KMO Test Value: 0.89
```

The KMO value is above 0.8, so the data is suitable for factor analysis. There is enough common variance among the variables for meaningful factor extraction.

```
Bartlett's Test Chi-Square: 30226.096998027744, p-value: 0.0
```

This test is highly significant, confirming that the variables are sufficiently correlated to perform factor analysis.

Together, the KMO value and Bartlett's test results demonstrate that:
- There is sufficient commonality among the variables to conduct a robust factor analysis.
- The dataset is suitable for identifying meaningful latent factors (e.g., commitment dimensions) that explain variance in customer responses.
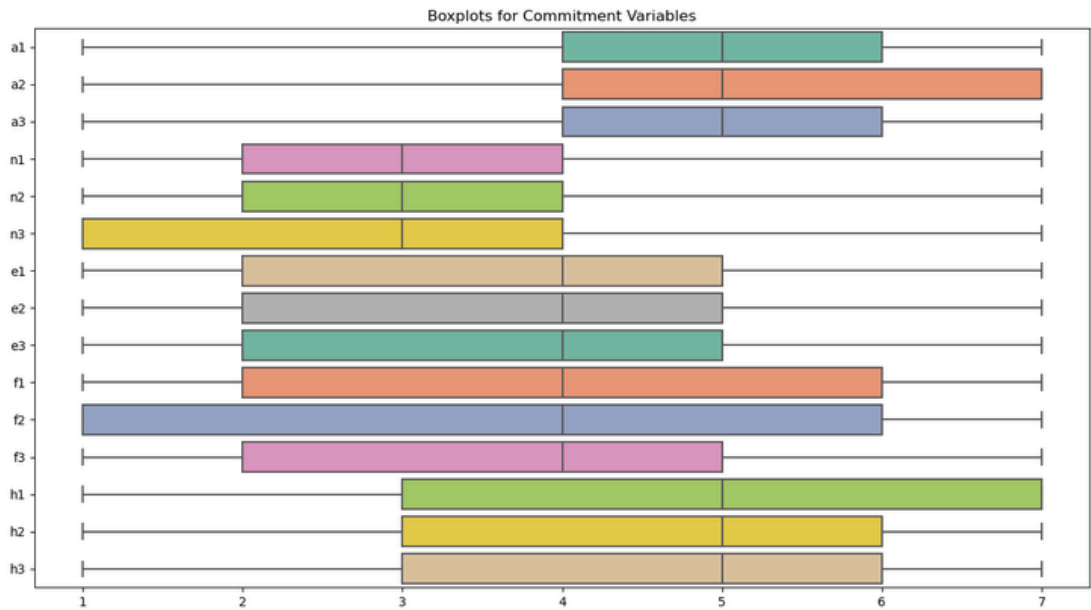
Findings from Factor Analysis

Factor 1: **Economic, Forced, and Habitual Commitment**
- Key Variables: e1, e2, e3, f1, f2, f3, h1, h2, h3
- This factor combines economic, forced, and habitual dimensions. Customers stay:
  - Because of financial benefits (economic commitment).
  - Because they feel locked in with limited alternatives (forced commitment).
  - Because of their routine behaviors (habitual commitment).
- Strategy: A subscription model reinforces financial value, incentivizes habitual use, and reduces negative forced feelings by providing clear benefits for staying.

Factor 2: **Normative Commitment**
- Key Variables: n1, n2, n3
- Represents a sense of shared values or obligations between the brand and customers. Customers feel aligned with Crew's Cup's mission or community values.
- Strategy: A brand campaign can rebuild loyalty by emphasizing Crew's Cup's founding ethos (e.g., quality, community, and health-first values).

Boxplots for Commitment Variables

```
Factor Loadings:
      Factor 1   Factor 2   Factor 3   Factor 4   Factor 5
a1  -0.060293   0.055196   0.927234   0.011852  -0.004668
a2   0.279689  -0.152000   0.835202   0.055460   0.143698
a3  -0.131956   0.094887   0.890385  -0.010412   0.002733
n1  -0.088769   0.926357   0.066908  -0.024371  -0.018637
n2  -0.107282   0.932838   0.051135  -0.063053  -0.066016
n3  -0.051105   0.949147  -0.090460   0.022373  -0.024793
e1   0.799910  -0.173321   0.157333   0.054959   0.489660
e2   0.809738  -0.110124   0.186755   0.016451   0.489524
e3   0.818059  -0.189461   0.184654   0.047597   0.454093
f1   0.862531  -0.124056   0.045897   0.416554   0.088897
f2   0.874276  -0.079378   0.009342   0.410938   0.056988
f3   0.842762  -0.134350   0.155613   0.440593   0.016084
h1   0.965086  -0.010111  -0.127571  -0.103300  -0.030488
h2   0.969512  -0.031779  -0.096340  -0.119113  -0.036640
h3   0.965196  -0.029461  -0.096152  -0.107238   0.002535
```

Findings from Factor Analysis

Factor 3: **Affective Commitment**
- Key Variables: a1, a2, a3
- Reflects customers' emotional attachment to the brand.
- Customers take pride in being associated with Crew's Cup and enjoy the experience.
- Strategy: Highlight success stories or personal connections in marketing to strengthen this emotional bond. Improve satisfaction by consistently delivering the premium experience that customers value.

Factor 4: **Forced Commitment**
- Key Variables: Secondary loading from f1, f2, and f3
- While forced commitment is heavily tied to Factor 1, its residual strength here may indicate customers feeling trapped by lack of alternatives or switching barriers.
- Strategy: Introduce new class offerings to give customers a sense of choice and variety.

Factor 5: **Miscellaneous**
- Key Variables: Minor loadings across variables
- This factor reflects leftover variance or unique, less structured dimensions of commitment that don't fit the primary factors. This may capture unique customer preferences or niche behaviors.
- Strategy: Monitor these behaviors for emerging trends but focus on actionable factors (1–4) for immediate strategic impact.

```
Factor Loadings:
     Factor 1  Factor 2  Factor 3  Factor 4  Factor 5
a1 -0.060293  0.055196  0.927234  0.011852 -0.004668
a2  0.279689 -0.152000  0.835202  0.055460  0.143698
a3 -0.131956  0.094887  0.890385 -0.010412  0.002733
n1 -0.088769  0.926357  0.066908 -0.024371 -0.018637
n2 -0.107282  0.932838  0.051135 -0.063053 -0.066016
n3 -0.051105  0.949147 -0.090460  0.022373 -0.024793
e1  0.799910 -0.173321  0.157333  0.054959  0.489660
e2  0.809738 -0.110124  0.186755  0.016451  0.489524
e3  0.818059 -0.189461  0.184654  0.047597  0.454093
f1  0.862531 -0.124056  0.045897  0.416554  0.088897
f2  0.874276 -0.079378  0.009342  0.410938  0.056988
f3  0.842762 -0.134350  0.155613  0.440593  0.016084
h1  0.965086 -0.010111 -0.127571 -0.103300 -0.030488
h2  0.969512 -0.031779 -0.096340 -0.119113 -0.036640
h3  0.965196 -0.029461 -0.096152 -0.107238  0.002535
```

Cluster Analysis

Our goal here was to segment Crew's Cup customers into distinct groups based on the five commitment factors (economic, normative, affective, forced, and habitual). These segments allow for tailored strategies to enhance customer retention and engagement, which helps us address specific needs and behaviors Crew's Cup's customers.
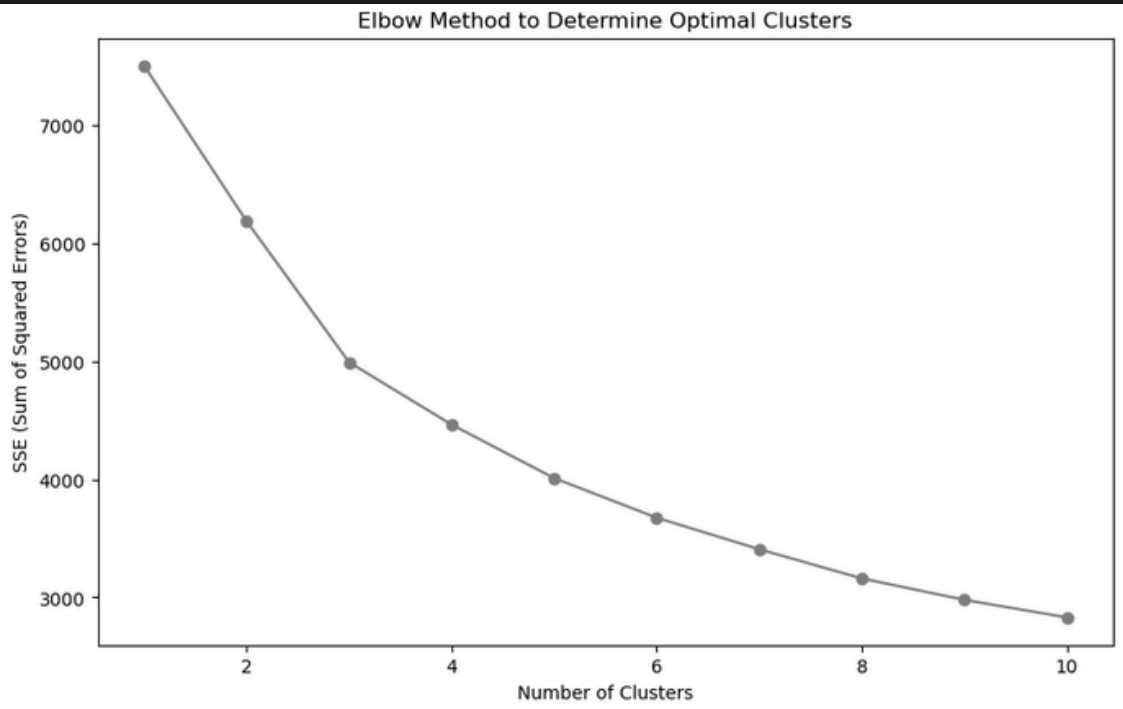
K-means clustering was applied to the dataset, using the commitment factors. The elbow method was used to determine the optimal number of clusters, which suggested a three-cluster solution. The silhouette score (0.26) suggests significant overlap among the clusters, likely caused by high correlations between some factors and overlapping customer behaviors. This overlap signals the need for refining the input variables or reducing the number of clusters to improve segmentation clarity.

The three clusters are characterized by their factor scores. **Cluster 0** has moderate scores across all factors, representing a balanced group with average commitment. **Cluster 1** exhibits high economic and habitual commitment, indicating a loyal group of customers driven by financial benefits and routine. **Cluster 2** shows low economic and affective commitment, identifying at-risk customers who may feel disengaged or dissatisfied with their experience.

For the high commitment customers in **Cluster 1**, we might suggest loyalty programs and subscription models to further enhance economic and habitual ties. **Cluster 2**, on the other hand, represents at-risk customers. Introducing new class offerings might re-engage these customers by addressing dissatisfaction and providing fresh experiences. As for customers in **Cluster 0**, these are customers that do not have a positive emotional attachment to the brand. A brand campaign focused on emotional and normative commitment can strengthen their connection to Crew's Cup and drive loyalty.

3-cluster solution

The SSE decreases steeply between 1 and 3 clusters. After 3 clusters, the reduction in SSE becomes more gradual, indicating diminishing returns with additional clusters.


```
Cluster Summary:
         Factor 1   Factor 2   Factor 3   Factor 4   Factor 5
Cluster
0        0.553153   0.612420  -0.891651   0.061527  -0.066350
1        0.894211  -0.989001   0.670971   0.114062   0.467314
2       -1.060469   0.110943   0.337781  -0.127435  -0.245885
Silhouette Score: 0.26
```

The silhouette score was **0.26**, indicating low clustering quality. While the segmentation offers actionable insights, the low silhouette score suggests further refinement to achieve more distinct and meaningful clusters.
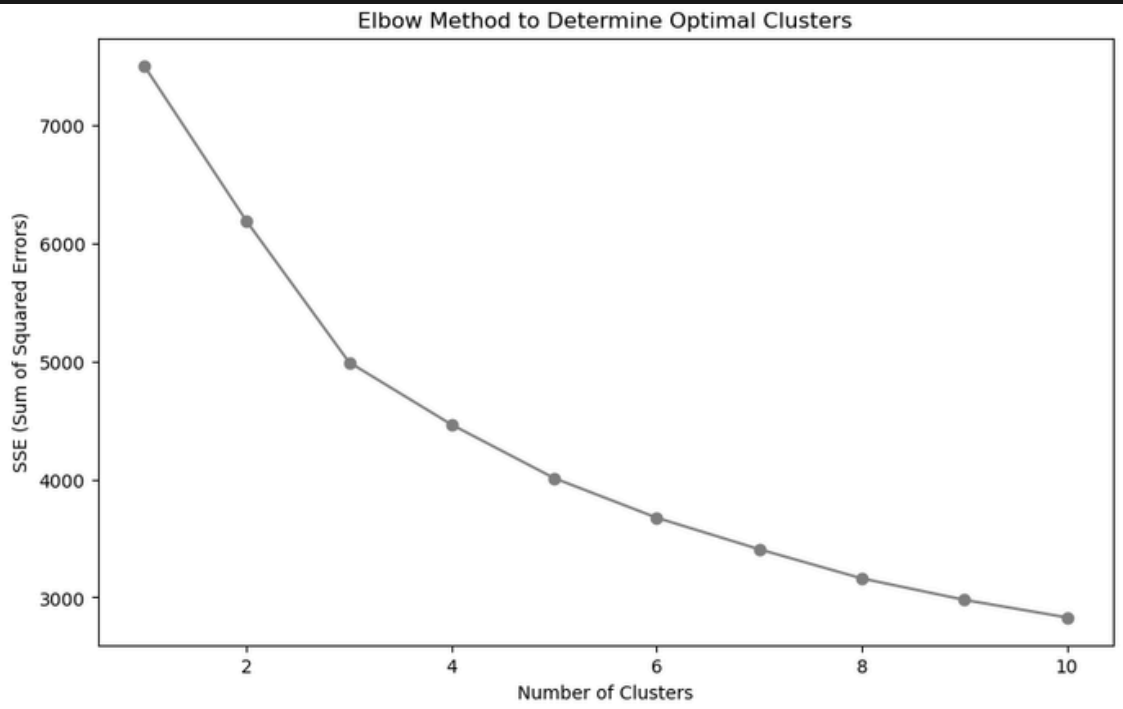
Cluster Analysis

Does the data support the agency's insights on audience segmentation?

The data partially supports the agency's insights on audience segmentation. The clustering analysis revealed three distinct customer segments, but the low Silhouette Score (0.26) suggests overlap between clusters, likely due to strong correlations among the economic, forced, and habitual commitment dimensions. This indicates that while segmentation exists, it may not be sharply defined. However, the clusters align with the agency's emphasis on targeting different audience needs: Cluster 1 represents loyal customers driven by economic and habitual commitment, Cluster 2 highlights at-risk customers with low economic and affective commitment, and Cluster 0 comprises moderate customers across all dimensions.

While the clustering provides broad segments, the regression analysis that we conducted adds greater depth, showing that economic, forced, and habitual commitment (Factor 1) are the most significant drivers of intent, which the agency can use to refine their segmentation insights. Together, the data supports the agency's foundational segmentation approach but suggests more nuanced targeting strategies based on the key commitment dimensions.

3-cluster solution

The SSE decreases steeply between 1 and 3 clusters. After 3 clusters, the reduction in SSE becomes more gradual, indicating diminishing returns with additional clusters.

Elbow Method to Determine Optimal Clusters


```
Cluster Summary:
        Factor 1  Factor 2  Factor 3  Factor 4  Factor 5
Cluster
0       0.553153  0.612420 -0.891651  0.061527 -0.066350
1       0.894211 -0.989001  0.670971  0.114062  0.467314
2      -1.060469  0.110943  0.337781 -0.127435 -0.245885
Silhouette Score: 0.26
```

The silhouette score was **0.26**, indicating low clustering quality. While the segmentation offers actionable insights, the low silhouette score suggests further refinement to achieve more distinct and meaningful clusters.

ANOVA

Do commitment levels vary by audience segment? What do you take away from this?
The ANOVA (Analysis of Variance) test is conducted here to determine whether the five commitment factors significantly differ across the identified clusters. Specifically, it helps to assess whether each factor contributes to meaningful distinctions between the customer segments created during the clustering process.

F-Statistic
Factor 1: Extremely high F-statistic (2352.16) suggests it is the most influential in differentiating clusters.
Factor 2 and Factor 3: Moderately high F-statistics (471.58 and 577.48) indicate they also contribute significantly to cluster differences.
Factor 4 and Factor 5: Lower F-statistics (8.41 and 66.76) suggest these factors are less significant in distinguishing clusters.

Strategy
In designing our customer retention strategy for Crew's Cup, we recommend prioritizing **Factor 1** as it strongly influences segmentation. Our ANOVA test underscores the dominant role of the economic, forced, and habitual commitment (Factor 1). We recommend using **Factor 2** and **Factor 3** to refine strategies targeting specific emotional and normative customer needs. We suggest monitoring **Factor 4** and **Factor 5** for niche behaviors or future trends.

Yes, commitment levels vary by audience segment. Cluster 1 shows high economic and habitual commitment, indicating loyal, routine-driven customers. Cluster 2 has low economic and affective commitment, representing at-risk customers lacking emotional engagement and financial value. Cluster 0 has moderate commitment across dimensions, suggesting a balanced but not deeply committed group.

The key takeaway is the need for tailored strategies: retain Cluster 1 with subscription models, re-engage Cluster 2 with new product offerings, and strengthen emotional bonds in Cluster 0 with brand campaigns.

	F-Statistic	P-Value
Factor 1	2352.161623	0.000000e+00
Factor 2	471.581243	1.481106e-159
Factor 3	577.476620	1.301577e-186
Factor 4	8.412249	2.328006e-04
Factor 5	66.755211	1.695582e-28

This table presents the results of an ANOVA test applied to the five factors derived from the analysis. All factors have p-values less than 0.05, which indicates statistical significance in explaining cluster differences.

Regression Analysis

```
                            OLS Regression Results
==============================================================================
Dep. Variable:                 intent   R-squared:                       0.405
Model:                            OLS   Adj. R-squared:                  0.402
Method:                 Least Squares   F-statistic:                     144.9
Date:                Sun, 17 Nov 2024   Prob (F-statistic):           4.23e-163
Time:                        11:02:57   Log-Likelihood:                 -1704.7
No. Observations:                1500   AIC:                             3425.
Df Residuals:                    1492   BIC:                             3468.
Df Model:                           7
Covariance Type:            nonrobust
==============================================================================
                         coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const                  4.0266      0.046     86.645      0.000       3.935       4.118
Factor 1               0.5072      0.025     20.056      0.000       0.458       0.557
Factor 3               0.1550      0.020      7.742      0.000       0.116       0.194
Factor 5               0.1675      0.021      8.136      0.000       0.127       0.208
contribution        4.325e-05   1.58e-05      2.744      0.006    1.23e-05    7.42e-05
treatment_Control     -0.1115      0.056     -1.988      0.047      -0.222      -0.001
treatment_New Product  0.2279      0.055      4.115      0.000       0.119       0.337
treatment_Subscription 0.1321      0.055      2.419      0.016       0.025       0.239
==============================================================================
Omnibus:                        1.994   Durbin-Watson:                   1.969
Prob(Omnibus):                  0.369   Jarque-Bera (JB):                2.037
...
Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 1.04e+04. This might indicate that there are
strong multicollinearity or other numerical problems.
```

This regression model was designed to identify the key drivers of customer intent at Crew's Cup Fitness. Unlike the cluster analysis, which segmented customers into groups for tailored strategies, this regression directly evaluates how specific factors and interventions (treatments) influence customers' likelihood to stay engaged, addressing a separate business question: **Which factors and interventions most impact customer retention?**

The model uses intent as the dependent variable and includes predictor variables such as commitment factors, contribution (profitability), and one-hot encoded treatments. Non-significant variables from the initial model—such as csat (Customer Satisfaction), Factor 2 (Normative Commitment), and Factor 4 (Residual Forced Commitment)—were removed to refine the model and improve interpretability. The treatment variable is one-hot encoded, with the Ad treatment as the baseline, meaning the coefficients for Control, New Product and Subscription are compared against the Ad group. The model explains 40.5% of the variance in intent and has a good fit.

How much influence do the commitment factors have on intent? Which factor has the strongest influence? The weakest?

Significant Predictors:

- Factor 1 (Economic, Forced, and Habitual Commitment): The strongest predictor, showing customers driven by financial benefits, routine behaviors, and reduced feelings of being "trapped" are most likely to stay engaged.
- Factor 3 (Affective Commitment): Customers with a strong emotional connection to Crew's Cup are more likely to maintain intent.
- Factor 5 (Miscellaneous): While secondary, this factor positively influences intent.
- Contribution (Profitability): Profitable customers are slightly more likely to stay, though the effect size is small.
- Treatment: New Product: The most effective intervention, showing that introducing new classes significantly increases intent relative to the Ad group.
- Treatment: Subscription: Subscription models also improve intent, though less effectively than the New Product treatment.

Ad Treatment as Baseline:

- The Ad treatment serves as the baseline for comparison. The Control group shows slightly lower intent than the Ad group, suggesting the importance of active interventions over inaction.

Regression Analysis

Which factors and strategies most effectively drive customer retention?

- Economic, Forced, and Habitual Commitment (Factor 1) is the dominant driver, emphasizing the need for strategies that leverage financial incentives, reinforce routine behaviors, and reduce dissatisfaction from being "trapped." This aligns with the case suggestion to consider a subscription model, which builds on these elements.
- The New Product Offering is the most effective intervention, aligning with the instructors' proposal in the case to introduce fresh experiences to engage customers and renew interest.
- Affective Commitment (Factor 3) highlights the importance of emotional connections, supporting the Ad agency's proposal for a brand campaign to rebuild customer loyalty and alignment with Crew's Cup's core values.

Strategic Recommendations

Which of the three options do you recommend based on the data from the experiment?

- **The focus should begin with New Product Offerings to quickly address churn and re-engage at-risk customers.**

1. **Prioritize New Class Offerings**
   - Rationale: The regression analysis shows that the New Class treatment has the largest positive impact on customer intent (coefficient = 0.2279, p < 0.001). This strategy directly addresses at-risk customers (Cluster 2) who have low commitment and are most likely to churn.
   - Action:
     - Develop and introduce new, engaging class formats to provide fresh experiences for customers.
     - Focus on re-engaging long-term customers and reducing dissatisfaction linked to forced commitment.
   - Impact: This strategy refreshes the brand, improves engagement, and reduces churn among at-risk customers.

2. **Implement a Subscription Model**
   - Rationale: The Subscription treatment significantly improves intent (coefficient = 0.1321, p = 0.016), leveraging economic and habitual commitment (Factor 1)—the strongest driver of customer retention. This is particularly effective for loyal customers (Cluster 1) who are routine-driven and value financial benefits.
   - Action:
     - Offer tiered subscription plans with clear financial incentives, such as discounts, priority booking, and exclusive perks.
     - Target habitual customers to create a steady revenue stream and reinforce loyalty.
   - Impact: This strategy stabilizes revenue, rewards routine-driven behavior, and fosters long-term customer relationships.

3. **Launch a Brand Campaign**
   - Rationale: Emotional connections and shared values (Factor 3: Affective Commitment and Factor 2: Normative Commitment) are significant drivers of intent. A brand campaign reinforces loyalty for moderate and loyal customers (Clusters 0 and 1) by rebuilding trust and aligning with Crew's Cup's core values.
   - Action:
     - Create a campaign emphasizing Crew's Cup's commitment to quality, community, and health-first values.
     - Use storytelling to highlight the company's history and customer success stories.
   - Impact: This strategy reestablishes emotional bonds with customers, strengthens loyalty, and attracts new customers.

Strategic Prioritization

The recommended strategies can be tailored based on Crew's Cup's available budget. With a high budget, the company should implement all three strategies—New Product Offerings, Subscription Model, and Brand Campaign—simultaneously to maximize impact across all customer segments. This approach ensures a comprehensive retention plan that addresses at-risk customers, reinforces loyalty among routine-driven customers, and rebuilds emotional connections with the brand. **However, under a low budget, the focus should begin with New Class Offerings to quickly address churn and re–engage at-risk customers.** This can be paired with a basic Subscription Model to retain loyal customers while stabilizing revenue. The Brand Campaign can be scaled back and executed through cost-effective digital channels, such as social media storytelling and targeted email campaigns.

A budget-sensitive approach allows Crew's Cup to remain adaptable while achieving its strategic goals. It ensures that customer retention is maximized by addressing the drivers of intent—economic incentives, habitual behaviors, and emotional connections. By revitalizing its brand with targeted interventions, Crew's Cup can foster loyalty and achieve sustainable growth, aligning with its long-term objectives.