New Search Algorithm

DATES  Sep 24, 2023 - Sep 28, 2023
OWNER  J  Josh Hanson
DECISION  B  Price conscious algo
Executive Summary

Hypothesis

By adding price to the search algorithm, we will increase average purchase value per order by 5% while not negatively impacting purchase conversion in key markets.

Key Takeaways

We observed a statistical significant increase in our primary metric of average purchase value per order of 7.71% ± 1%. This greatly exceeded our hypothesis. We also see statistically significant increase in our conversion metrics across all core metrics. As such, we recommend rolling out the variant immediately.

Decision

ROLLED OUT VARIANT: Price conscious algo

Links

- Figma Mocks
- search-experiments
- Product Requirements Doc
- Jira Issue: EP-12333
**Experiment Variations**

- **B) Price conscious algo (treatment_1)**
  - Variant shows rankings with the new algorithm with a heavier weight on price of the product

- **A) Control (control)**
  - Control shows rankings with the current search algorithm
Primary and Guardrail Metrics

Our primary metric of average purchase value per order increased 7.71% ± 1%.
Our guardrails of purchase conversion in key markets (US, Asia, Europe) were not negatively impacted.

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Control</th>
<th>B</th>
<th>Lift</th>
<th>-20%</th>
<th>-10%</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Purchase Value per Order</td>
<td>15.01</td>
<td>16.17</td>
<td>7.71%</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Add-to-Cart -&gt; Checkout Conversion</td>
<td>0.93</td>
<td>0.95</td>
<td>2.34%</td>
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<td></td>
<td></td>
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<tr>
<td>Purchase Conversion (United States)</td>
<td>0.035</td>
<td>0.039</td>
<td>10.79%</td>
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<tr>
<td>Purchase Conversion (Asia)</td>
<td>0.070</td>
<td>0.078</td>
<td>10.87%</td>
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<tr>
<td>Purchase Conversion (Europe)</td>
<td>0.068</td>
<td>0.078</td>
<td>14.69%</td>
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</table>
Metric Deep-dive

Splitting average purchase by user type and session referrer shows increases across the board. We don’t risk any drops across different user segments by rolling out this variant.

Average Purchase Value per Order by Session Referrer

B Price conscious algo vs. A Control

Average Purchase Value per Order by User Type

B Price conscious algo vs. A Control
Next Steps

We recommend exploring further changes to the new algorithm. In particular, trying an even heavier weight on price to see if we can boost average purchase value per order even further.