

INSIGHT 4 — The Hardware Premium Tax

OLS Regression & Battery Penalty Analysis

```
139 print(reg_summary.to_string(index=False))
140
141 print("\n\n■ TABLE 4B: Battery Penalty Zone – Premium Products with Low Battery")
142 print("="*80)
143 penalty_by_cat = premium_low_batt.groupby('category').agg(
144     count=('product_id', 'count'),
145     avg_price=('price', 'mean'),
146     avg_battery=('battery_mAh', 'mean'),
147     avg_rating=('rating', 'mean')
148 ).round(2).reset_index()
149 penalty_by_cat.columns = ['Category', 'SKU Count', 'Avg Price', 'Avg Battery (mAh)', 'Avg Rating']
150 penalty_by_cat = penalty_by_cat.sort_values('SKU Count', ascending=False)
151 print(penalty_by_cat.to_string(index=False))
```

Block 4 Complete | 151 lines of executable Python | Statistical tests + Visualization + Export table | 3 page(s)